

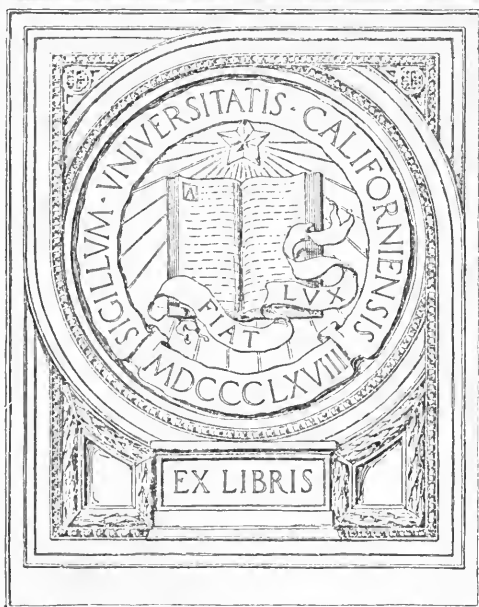
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OF THE
NEW HIGH GERMAN LANGUAGE

BY

ARWID JOHANNSON, M.A.

PROFESSOR OF GERMAN LANGUAGE AND LITERATURE
IN THE VICTORIA UNIVERSITY OF MANCHESTER.

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Preface.

To urge the value of Phonetics for the theoretical and practical study of languages would be "to carry owls to Athens". The Victoria University of Manchester took a step in the right direction, when, with the view of testing the pronunciation, it introduced an oral examination in modern languages for the Pass Degree; since the establishment of the Honours School for modern languages theoretical questions in Phonetics have always been asked in the oral examination; and the regulations for the M.A. examination expressly recognise Phonetics as a subject of examination, although they adopt — in order not to alarm nervous minds — a somewhat "bashful" wording: "oral examination in the theory and practice of pronunciation".

The nucleus of this book is formed by my notes for lectures in Phonetics given by me in Uppsala 1889, 1891, 1893, but they have, of course, undergone great alterations: whilst, on one hand, in some respects they have been considerably expanded, and I have endeavoured to turn to the best advantage the results of the researches of recent years; on the other hand, they have been abbreviated, as I have eliminated all the discussions about the numerous phonetical points at issue, in order to give a more practical character to the book, and not increase its volume unduly: I hope, μηδὲν ἄγαν will hold good also here. If therefore the statements seem to wear quite an apodictic form, I do not wish to imply by this that the given explanation or pronunciation is the only admissible one, but I wish to say that it is the right one or the preferable one according to my conviction, the reasons for which I cannot state in this little book. My object is only to give the basis for phonetical instruction; the interpretation is left altogether to the teacher,

as Phonetics is not a science which can or should be learned in an autodidactical way.

The book is intended for a systematical study; an isolated phonetical fact, picked out of the context by an uninitiated person, might be productive of mischief instead of profit. I must therefore address a request to those who are not willing to work through the book systematically, to leave it unopened.

For the composition of my Phonetics I have, of course, consulted the standard works, mentioned on page IX, and other minor writings, quoted by them. To all of them I recognise willingly my debt; but more than to them, and more than I can exactly estimate, I owe a debt of gratitude to my teacher, Professor E. Sievers, with whom in private conversation I have had the advantage of discussing so many phonetical questions during my sojourn in Tübingen and Halle in former years.

As regards the Diagrams given on the six Plates, Fig. II—VI are reproductions slightly modified: I am indebted to J. N. Czermak's *Gesammelte Schriften*, Bd. II (W. Engelmann, Leipzig 1879) for Fig. II and V, and to F. Techmer's *Naturwissenschaftliche Analyse und Synthese* (in *Internationale Zeitschrift für allgemeine Sprachwissenschaft*, Bd. I. J. A. Barth, Leipzig 1884) for Fig. III, IV, and VI. The rest I have drawn on the basis of my own observations. As in ascertaining the position of the organs of speech I limited myself to the use of a laryngoscope, mirrors, and straightened watch-springs, to the ends of which I fastened pieces of cork of different sizes, the Diagrams cannot claim to be exact in all details. I venture, however, to hope that they will nevertheless be able to impart a fairly correct general impression.

Finally, it is a pleasant duty to me, to express my thanks to Prof. W. C. Summers of Sheffield, who has had the kindness to improve the English style of the book.

Horgr, Didsbury, 1904.

A. J.

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Principal Books on Phonetics.

General Phonetics.

- Otto Jespersen**, Fonetik, en systematisk fremstilling af læren om sproglyd. København 1897—1899. (His *Lehrbuch der Phonetik* is an abbreviated translation by H. Davidsen. Leipzig und Berlin 1904.)
- — *Phonetische Grundfragen*. Leipzig und Berlin 1904.
- E. W. Scripture**, *The Elements of Experimental Phonetics*. New York and London 1902.
- Eduard Sievers**, *Grundzüge der Phonetik*. 5. Auflage. Leipzig 1901.
- — *Phonetik* (in **Paul's** *Grundriss der Germanischen Philologie*. 2. Auflage. Band I. Straszburg 1901).
- Johan Storm**, *Englische Philologie* (Band I. 1: *Phonetik und Aussprache*). 2. Auflage. Leipzig 1892.
- Henry Sweet**, *A Primer of Phonetics*. 2nd Edition. Oxford 1902.
- F. Techmer**, *Naturwissenschaftliche Analyse und Synthese der hörbaren Sprache* (in: *Internationale Zeitschrift für allgemeine Sprachwissenschaft*. Band I. Leipzig 1884).
- M. Trautmann**, *Die Sprachlaute im allgemeinen und die Laute des Englischen, Französischen und Deutschen im besondern*. Leipzig 1884—1886 (out of print).
- — *Kleine Lautlehre des Deutschen, Französischen und Englischen*. Bonn 1903.
- Wilhelm Viëtor**, *Elemente der Phonetik des Deutschen, Englischen und Französischen*. 4. Auflage. Leipzig 1898.

German Phonetics.

- Wilhelm Braune**, *Über die Einigung der deutschen Aussprache*. Halle 1905.
- Otto Bremer**, *Deutsche Phonetik*. Leipzig 1893.
- George Hempl**, *German Orthography and Phonology*. I. Boston and London 1897 (important for the accentuation).
- J. Minor**, *Neuhochdeutsche Metrik*. 2. Auflage. Straszburg 1902 (important for the accentuation).
- Theodor Siebs**, *Deutsche Bühnenaussprache*. 2. Auflage. Berlin 1901.
- Wilhelm Viëtor**, *German Pronunciation: Practice and Theory*. 3rd Edition. Leipzig 1903.
-

Notes on Spelling, Asterisks, and Types.

All the German words are given in the official spelling of 1901, sanctioned by the governments of Germany, Austria, and Switzerland (cf. **K. Duden**, Orthographisches Wörterverzeichnis der deutschen Sprache. Leipzig und Wien).

A word which is adduced as an individual or isolated example for a statement is marked by an **asterisk**, whilst typical examples remain unmarked; e. g. *flugs (§ 29 Note 1) means that only in this word **g** is to be pronounced as **k**: *flu²k²s*; whilst elsewhere, in combination with **s**, it has always the value of **ch**: Flugs, Trugs etc. *flu¹h²s*, *tru¹h²s* etc.

German words are **spaced**; single letters are given in **bold types**; but single sounds or phonetical symbols are printed in *italics*. The **keys** to these are given in § 17 and 56.

Corrigenda.

§ 6 note: read Karlsruhe instead of Mannheim. Page 11: r. *ts*, *tš* i. o. *st*, *št*. § 17, 5: r. *ɛ²nt¹ri¹g¹*. § 17, 9: r. *ma²ɔn¹é¹t*. § 17, 21: r. *k²h²o²m¹p¹a²n¹*. § 17, 23: add Abfall. § 20 note 1: r. by almost all i. o. by all. § 21 note 1: strike out Wagner, *wá²gn¹*, Vogler *fó¹gl¹*. § 21 note 2: r. *h²á²o²s*. § 29 note 2: r. *wé²k²s¹*; *ó²k²s¹*. § 54: r. *nó¹t¹v²q²sgā²ɔ*. § 54 note 2: r. *mí²t¹hā²h²* (second word); *á²h²t¹s¹h¹* (second word); *há²l¹p¹ri²s¹m¹á²* and *há²l¹p¹ri²s¹m¹á²*; *é²k²s¹llé²nt²s* and *é²k²s¹llé²nt²s*. § 55: r. in sonantal or consonantal function i. o. or *i²*. § 56, 8: r. *šá²s¹*; *p¹á²z¹ó¹n*. § 56, 17: r. *bí²é²*. § 56, 20: r. Coeur i. o. Co. § 58: r. *ó¹q¹ó¹*; in the same line add *q* after a voiceless; r. *y* i. o. *y*. § 59: r. *šá²rla²t¹hā²n*; *p¹h²o²stí²lí²ó¹n*. § 65: r. *á²t¹hé¹n¹*; *á²w¹*; *k²há²f¹*; *dé²mó¹n*. § 66: r. *á²t¹hé¹n¹*. § 69, 4: r. *k²hā²m*. § 70, 4: r. *lo²rt*. § 70, 6: r. *me²t¹hā²f¹*. § 72, 3, a: r. *í²rdí²š*. § 73: r. *p¹í²ó¹bí²rn*; *k²h²ó¹rā²l*; *štú¹dé²nt*; *tší²rā²t*; *jú¹l¹*; *á²lzo¹*. § 74: r. if it i. o. if is; r. *fó¹r*. § 79, 1: r. *k²hú²n²štú²k* (second word). § 83: r. *í²nt¹rré²ó¹* and *í²nt¹rré²ó¹*; *h¹é¹r²é²n*; *ri²t¹t¹hū¹m*. Page 59: r. glücklich. § 95: r. lutherisch (second word). § 106, II, 1: r. únäufháltsám. Page 80: r. Phòtogràph. § 120, 1: r. arábisch. (Several misprints appeared only in the final printing, owing to breaking off of the accents and diacritics added to the types in casting.)

I. Introduction.

1. **Phonetics** is the science which deals with the production and the nature of speech-sounds, their combination into groups (syllables, words, sentences), and the general laws for their alterations.

Definition
of phonetics.

2. If a thought or sensation is to be conveyed to another person by means of speech, psychological, physiological, and physical factors have to act. If we have a thought or a sensation in our intellectorium and the intention to express it (**psychological factor**), by means of certain nerves, starting from the centre of speech (in the cortex of the left cerebral hemisphere), certain organs of speech are set in motion (**physiological factor**). These organs of speech produce a vibration of the air, the waves of sound (**physical factor**), which strike the ear (physical factor), and which by means of certain organs and nerves are conveyed to the acoustic centre of the brain (physiological factor), and then in the intellectorium again transmuted into a thought or a sensation (psychological factor), provided, of course, that what is heard is understood.

Speaking and
hearing
(under-
standing).

3. For phonetics the most important is the physiological factor, the articulation of the speech-sounds. In speaking the physical (acoustic) factor is in the same relation to that as effect to cause; and as we can infer from the effect the effective factors, it will be necessary to pay attention to the tone too, although this is always something secondary from a phonetical point of view. A knowledge of physics is not required for practical phonetics; e. g. the acoustic analysis of a **ch** or **ü** would hardly help a person who is not familiar with these sounds to acquire the right pronunciation. The psychological

Phonetics
and the
physiological,
physical,
and psycho-
logical
factors.

element can be neglected, if we deal with the formation of the sounds, but it plays an important part in the synthesis, especially in the accentuation, cf. §§ 86. 88. 106 note 1. 125.

4. A phonetical analysis has always to start from the spoken language, of which the writing gives only an extremely defective image, sufficient for one who knows the language, but quite inadequate and misleading for any one else, who would simply substitute the sounds familiar to him. Writing is in the same relation to speech as a colourless and shapeless pencil sketch of scenery would be to the coloured and plastic original of nature.

Letter
and sound.

Note. If we neglect all the niceties, such as accent, quantity, glides, etc., the shortcomings of writing chiefly consist in the following facts: 1) the same letter is used for several sounds: e. g. biegen $b\bar{i}^1j\eta$, biegt $b\bar{i}^1h^1t$, bogen $b\acute{o}^1g\eta$, bog $b\bar{o}^1h^2$, ging $g\bar{i}^2\eta$, Genie $\acute{z}\acute{e}^1n\acute{i}^1$; 2) several letters indicate the same sound, e. g. viel $f\bar{i}^1l$, fiel $f\bar{i}^1l$, Philosophie $f\bar{i}^2l\acute{o}^2z\acute{o}^1f\bar{i}^2$; 3) several letters are used for a simple sound, e. g. schon $\acute{s}\bar{o}^1n$, Vieh $f\bar{i}^1$; 4) sounds are not expressed in writing at all, e. g. Kind $h\bar{h}i^2\eta t$; 5) letters are written, where no sound is pronounced, e. g. nahe $n\acute{a}^2\eta$, handen $b\acute{a}^2n\eta$.

5. In the spoken language the object of investigation is only the sentence, not the word, and still less the sound.

Words
and stress
groups.

The sentence is to be divided into **stress groups** or **breath groups** (**Sprechtakte, Sprachtakte**), cf. § 121; these into **syllables**, and these into **sounds (Laute)**. The spoken sentence *der Hund verfolgt die geschlagene Katze* consists from a phonetical point of view of the following stress groups: *der | Húnd ver-
fólg't die ge|schlágene | Kátze*; accordingly, in speaking, a notional analysis of the sentence into words does not take place. From a phonetical standpoint the grammatical conception "word" is no real quantity, but only an abstraction; of course, by this is not meant that words cannot sometimes form stress groups, e. g. *der | Knábe | wóllte | hénte | kómmen*. But phonetically we must not speak of words or beginning or end of words (**Anlaut** and **Auslaut**), but of stress groups or beginning or end of stress groups. If, however, in this book mention is made of words, and the de-

scription commences with the sounds, we must always remember that this is only a concession to practical convenience, and by no means corresponds to a scientific description of phonetics, which ought to begin with the sentence and gradually descend to the simplest elements, the sounds.

6. A text-book of practical phonetics of New High German has not to describe the sounds of German dialects or of any particular dialect, but the sounds and phonetical phenomena of the standard **New High German** (N. H. G.) literary language (*neuhochdeutsche* [nhd.] *Schriftsprache*), which, although consisting of **Middle German** (M. G., *mitteldeutsch*, md.) and **Upper German** (U. G. *oberdeutsch*, obd.) elements, can nowhere be fixed in a geographical sense, because N. H. G. means the language, more or less free from dialectical peculiarities, of the educated classes of Germany, Austria, Switzerland and the Baltic provinces, whilst the countryside and the lower classes of the population in the towns speak dialects peculiar to them.

New High
German
literary
language.

Note. The German dialects are divided into **Low German** (L. G., *niederdeutsch*, nd.), **Middle German**, and **Upper German**; Middle and Upper German together are also called **High German** (H. G., *hochdeutsch*, hd.). Low German is spoken in the North German lowlands; Upper German in the mountain districts of the South, namely Alsace, Baden, Württemberg, Bavaria, Austria, and Switzerland. Between the Low German and Upper German territories is situated the Middle German district, i. e. the provinces on both sides of the middle Rhine (roughly speaking from Düsseldorf to Mannheim) and the Main, together with Thuringia, Saxony, and Silesia.

7. In spite of the fact, that the literary language stands above the dialects, it is more or less exposed to the influence of the dialects in the different districts. Only on the stage do we find the tendency to throw off all that is dialectical and to aim at a language, uniform for the stages of all districts, as the wandering actors, originating from different provinces, not only have to speak in the district now of this dialect, now of that, but are also obliged to make themselves understood even at the same place to a larger audience, which consists of the representatives of the most different dialects. Prac-

The
best German

tical phonetics have therefore to use as standard such a pronunciation as has developed itself on the stage, and yet not that pronunciation which is applied in the pathetic, highly classical drama, but the pronunciation of the **elegant drama (Konversationsstück)** which for the representation of the circumstances and conditions of the modern life of the educated classes uses the unaffected language of conversation, free from dialectical peculiarities. If we disregard all those phonetical features which aim only at the effect to be produced in the distance and at the ensemble, this pronunciation is essentially identical with that of the educated classes of Berlin. As the capital of the empire, as the centre of "Beamtendeutsch", i. e. the style and pronunciation, used by German officials, who like the actors, have often to change their domiciles, and as one of the intellectual centres of Germany, this city exercises a powerful influence on the culture of even reluctant districts, and, although situated in a Low German territory, is not without effect on the High German language. To the theatres of Berlin it is to a certain extent due, that on all the leading stages of Germany and Austria the principle was unanimously accepted that the High German forms of the words of the N. H. G. literary language should be pronounced with Low German speech-sounds.

"Speaking generally, I would call him the best speaker who most effectually baffles all efforts to discover from what town or district he comes" (Victor).

Note. This definition must, of course, not be understood to imply that we should attribute the best German to a person who e. g. at one moment uses a Holstein pronunciation, at a second a Silesian, at a third a Bavarian, for in such a case we miss the uniformity essential to the standard pronunciation.

II. The organs of speech and their functions.

8. The parts of the human body which are active in speaking are: the lungs, the windpipe, the throat, the cavity of the mouth with the tongue, the teeth and lips, and the cavity of the nose.

Organs
of speech;
organic
basis.

The position in which these organs are in quiet and regular breathing, wherewith no speaking can take place, is called the **position of indifference (Indifferenzlage)**. This position can also be termed **organic basis (Artikulationsbasis)**, because it forms the natural foundation for the different articulations of the apparatus of speech. With the German organic basis the tongue is not so much lowered, retracted, and flattened as with the English organic basis; nor is in the former case the tongue hollowed in front. Whilst with the English the lips remain fairly inactive and are only slightly rounded, the Germans have an inclination to round them considerably and to pout them. On these fundamental differences between the German and the English organic bases chiefly depend the differences between the German and the English sounds, especially vowels; cf. §§ 23 note 2. 37 note 2. 40 note. 43 note. 63 note 2. 67 note.

9. The foundation of speech is the breath which is expelled by the **lungs** and, through the **windpipe (Luftröhre, trachea)**, enters the throat. On the force or intensity with which the lungs expel the breath depends in the syllable the stronger or weaker accentuation, stress (cf. §§ 87. 89), and in the single sound the difference between fortis and lenis (cf. § 53).

Lungs: force
of expiration.

10. The breath can undergo the first interception and therefore modification in the **larynx (Kehlkopf)**. The foundation of it is formed by the **cartilago**

Larynx;
Fig. I—V.

cricoidea (Ringknorpel) which has the shape of a seal-ring and rests on the trachea, with its wider part at the back. The cart. eric. is the support of the **cartilago thyreoidea (Adam's apple, Schildknorpel)** and is at the same time partly surrounded by it. For the cart. thyr. consists of two plates, having the form of shields, which join in front at about a right angle, but at the back open wide, in order to be able to receive the wider part of the cart. eric. Across the cavity, formed in this way, are stretched two elastic cushions of muscles, the **vocal chords (chordae vocales, ligamenta glottidis vera, Stimmlippen, Kehlkopflippen;** the usual expression **Stimmbänder** gives an erroneous idea of them, as they are comparable not to a pair of membranes, but to a pair of cushions suitable for compression). In front they are firmly inserted in the angle of the cart. thyr., but at the back they coalesce with two small cartilages, the **cartilagine arytaenoideae (Gieszkannenknorpel, Stellknorpel)**. These have the form of three-sided pyramids and rest on the wide part of the cart. eric.; they can rotate on their axes and be separated from each other, and are accordingly able to give different positions to the vocal chords, and with them, of course, also to the space between the vocal chords, the **glottis (glottis vera, Stimmritze)**. Above the real vocal chords are the **spurious ones or ventricular bands (ligamenta glottidis spuria, falsche Stimmbänder, Taschenbänder)** which are not used in speaking and form only a protection for the real vocal chords. Between the real and the spurious vocal chords the larynx is widened into small cavities, one on each side, the **laryngeal ventricles (ventriculi Morgagni)**, in consequence of which the real vocal chords find a free space for their vibrations and are kept lubricated by the mucus, emptied from the laryngeal ventricles. Above the cart. thyr. and behind the root of the tongue is a valve, the **epiglottis (Kehldeckel)**, which has no function in speaking, but only serves to shut the larynx in swallowing.

11. The principal positions of the glottis are the following:

Position of
the vocal
chords;
Fig. VI.

- 1) The glottis can be wide open and have an almond-shaped form, as in breathing.
- 2) It can be less open and thereby form an iso-

sclees triangle with a vertex-angle of about 25° , as in pronouncing a **voiceless** (**stimmlos**) sound (cf. §§ 16, 1. 49), e. g. *s* in Engl. *so* or Germ. *das*.

3) The glottis, forming an isosceles triangle with a vertex-angle of about 10° , is narrowed to such a degree that the expired air produces a rubbing noise at the edges of the vocal chords, as with *h* (cf. § 34).

4) The vocal chords can slightly touch each other, without forming a complete closure, so that the breath can escape only by making them vibrate; thereby the glottis is with great rapidity alternately opened by the pressure of the air and shut again on account of the elasticity of the vocal chords; there is thus produced a **voiced** (**stimmhaft**) sound (cf. § 16, 1. 49), e. g. *z* in Engl. *zeal* or in Germ. *so*. The tone which is the result of the vibration of the vocal chords is called **voice** (**Stimmton**).

5) The vocal chords can be firmly closed as in forming the **glottal stop** (§ 28). Herewith no production of a sound takes place, until the glottis is violently forced open by the breath.

6) The front part of the glottis (**glottis vocalis**) can be closed, but the back part which is situated between the cartilaginea arytaenoideae (**glottis respiratoria**) can be open and form an equilateral triangle, as in whispering voiced sounds. (Whispered voiceless sounds are formed in the second position of the glottis.)

Note. We can easily convince ourselves as to the presence of voice in a sound by the trembling of the cartilago thyroidea perceptible when we put a finger on it, or by the humming and ringing, heard if we shut the entrances of the ears. These two characteristics are not to be found in a voiceless sound. To denote the absence of voice, we put a dot below, e. g. *s*; the presence of voice remains undenoted, e. g. *z*.

12. Above the larynx is a cavity, called **pharynx** (**Rachenhöhle**), which on the other hand is in communication with the **oral cavity** (**Mundhöhle**) and the **nasal cavity** (**Nasenhöhle**). The roof of the mouth consists of the following parts: upon the upper teeth follow the **alveoli** which form a little fleshy convexity.

Pharynx;
roof of the
mouth;
Fig. 1.

These pass into the concave osseous **hard palate** (**palatum durum, harter Gaumen**) which stretches backwards about as wide as the row of the teeth. Then follows the **soft palate** (**palatum molle, velum, weicher Gaumen, Gaumensegel**) which tapers in a pendulous extremity, the **uvula** (**Zäpfchen**).

For phonetical purposes we divide the roof of the mouth into:

- 1) a front section, the **alveolar** or **supradental** region;
- 2) an intermediate section, the **prepalatal** region, i. e. the hard palate;
- 3) a back section, consisting of the **mediopalatal** or **front velar** region (the front part of the velum), the **postpalatal** or **back velar** region (the back part of the velum), and the **uvular** region.

Note. The term “palatal” with the meaning of “prepalatal” ought to be avoided, as “palatal” can also be referred to the soft palate, the velum. Also the term “alveoli”, although in general use, is wrong, as it denotes the sockets of the teeth in anatomical terminology, whilst the phoneticians use it for the convex rim above the upper front teeth only; but the expression may be retained for want of anything better.

13. 1) The **velum** with its appendix, the **uvula**, can be pressed against the back wall of the pharynx, so that the nasal cavity is shut and the air must escape through the mouth only, as is the case with all the oral, i. e. non nasal, sounds (e. g. cf. Fig. XI, XIV, XV, XVIII).

Functions of
velum and
uvula; the
nasal cavity.

2) The velum and uvula can hang down loose between the wall of the pharynx and the back of the tongue, so that the breath escapes both through the mouth and through the nose, as is the case in the position of indifference and in the pronunciation of the French nasalised vowels, as *bon* $b\bar{a}^2$, *chance* $\text{ʃ}\bar{a}^2\text{ʃ}^1$, *fin* $f\bar{e}^2$; [provided that nowhere in the mouth an occlusion (cf. § 59) takes place (cf. Fig. I, XVIII). If on the contrary an occlusion in the mouth is formed, then, of course, with this position of the velum, the breath must escape through the nose only, as in the pronunciation of our usual nasals, e. g. *man*, *Menge* $m\bar{e}^2\bar{a}^1$; cf. § 44 (Fig. XI, XIV, XV)]. The nasal cavity itself is not capable of any modification.

Lastly, the uvula can be put into trilling motion by the breath, and thereby is produced the burred *r* (cf. §§ 26, 3. 40. Fig. VIII).

14. The **tongue** is a compact mass of muscles which fills up the whole bottom of the oral cavity. We can divide the tongue into the front part, the middle part, the back part The tongue. and the root; we have besides to distinguish between the **edge** (**Zungensaum**) and the **upper surface** of the tongue (**Zungenrücken**). Articulations in which the front edge is active are called **coronal**, e. g. in *t*, *d*; those in which the side edges play a part are called **lateral**, e. g. in *l*; articulations which are made by the upper surface of the tongue are termed **dorsal**, e. g. in *g*, *k*. At the root of the tongue, opposite the uvula, is a slight hollow, **foramen caecum** (**blindes Loch**), which serves as a drumskin for the trilling uvula in forming the uvular *r* (cf. § 41. Fig. I, VIII). The tongue is so amply supplied with muscles that it is capable of the most manifold and complicated movements, the details of which can best be described in connection with the single sounds. The principal movements of the tongue or of individual parts of it in different degrees and different combinations are: raising — lowering; pushing forward — retracting; forming a cavity, as in *ɜ* (Fig. XIII); making the tip trill, as in the alveolar *r* (cf. § 40).

15. The **lips**, as far as they are concerned in forming a sound, can either be closed, as with *m*, or show openings of different shapes: 1) in drawing back the corners of the mouth, the lips can form a slit, as The lips;
Fig. VII. with *i* in *ihn*; 2) the lips can show an oval rounding, as with *u* in *du*; the lips, when rounded, can at the same time be projected or pouted, as is mostly the case with the German *u*; 3) the lips remain passive whilst they are opened by lowering the lower jaw, as with *a* in *a ber*. Between these three principal forms we have still intermediate forms; the result of a combination of the *i* and *a* positions is the *e* position of the lips; the result of a combination of the *u* and *a* positions is the *o* position.

16. In articulating any sound, vowel or consonant, we have always to ask the following questions: 1) whether the glottis is open or whether the vocal chords touch each other and vibrate, i. e. whether we have

Voiced — voiceless; oral — nasal; consonant — vowel.

to do with a **voiceless** or **voiced** sound (cf. § 11, 2, 4); 2) whether the nasal cavity is closed by the velum (**oral sounds**) or not (**nasal sounds**) (cf. § 13); 3) whether the organs of the mouth somewhere in the median line form an obstacle (occlusion, narrowing, or trilling) to the breath, or whether the cavity of the mouth in its whole length from the pharynx to the lips is open in its median line; in the former case we have a **consonant**, in the latter a **vowel** or **sonant**.

Note 1. This obstacle, characteristic of a consonant, can be situated in the larynx itself under certain conditions; in such a case the question under 1 is no longer to be taken into account, as the sounds of this sort occurring in standard German are always voiceless (cf. §§ 11, 3, 5. 28. 34).

Note 2. Sometimes a consonant can have the function of a sonant or vowel, e. g. *Handel*, *Händen* pronounced as $h\acute{a}^2ndl$, $h\acute{e}^2nd\grave{u}$ (compare Engl. *idle*, *hidden*, cf. § 55); and vice versa a vowel can be treated as a consonant, e. g. *Union*, *Familie*, pronounced as $\acute{u}^1n\grave{i}^2\acute{o}^1n$, $f\acute{a}^2m\grave{i}^1l\grave{i}^2\acute{o}^1$, with Engl. *y*, not with Germ. *j* or *i* (cf. Engl. *familiar*, *union*). We indicate the vocalic function of a consonant by a small circle under it, and the consonantal function of a vowel or sonant by a semicircle.

III. Consonantism.

17. For the sake of convenience I anticipate the **Table of the 31 German Consonants** together with the list of the phonetical symbols and the key-words for the different spellings; the explanations are given in §§ 18—55.

Consonantal
symbols and
key-words.

		Mode of interception				
		oral				nasal
		occlusive	fricative	trill	lateral	
Place of interception	laryngeal	ʔ	h			
	uvular			r r		
	mediopalatal	g k	g h²			n v
	prepalatal		ç h¹			
	alveolar	d t	z ʒ s ʃ		l ʎ	n ñ
	labiodental	p²	ɸ f			m²
	bilabial	b p¹	ɸ			m¹ m¹

Combined consonants { aspirates: *kh, th, p¹h*.
affricates: *st, št, p²f*.

1) ʔ voiceless laryngeal occlusive: Unart *u²n:ä²t*, unexpressed in writing.

2) h voiceless laryngeal fricative: Hund, Oheim; unexpressed in *kh* (nº 6), *th* (nº 14), *p¹h* (nº 28).

3) r voiced uvular trill: rauh; Rhein; irren; Kattarrh (only Greek words).

r the same sound in sonantal function: Bruder *brü¹dr*.

4) *r* voiceless uvular trill; **trau** $tr^{\bar{v}}\bar{a}^2\bar{o}^2$; **irrt** i^2r^2t .

5) *g* voiced mediopalatal occlusive: **Gram**; **Flagge** (only Low German words); **Intrigue** $i^2\bar{n}^2t^2r^2i^1g^{\bar{o}^1}$ (only French words); **Ghetto** (only Italian words).

6) *k* voiceless mediopalatal occlusive: **Kram**; **backe**; **Quelle**; **flugs**; **Examen** ($x = k\bar{s}$); **sechs**; **flaggt** (only Low German words); **Clique** $k^2l^2i^2k^{\bar{o}^1}$, **Acquisition**, **Accusativ**, **Akkusativ** (only Romance words).

7) *kh* voiceless mediopalatal aspirate: **kund** $k^2hu^2\bar{n}^2t$; **local** $\bar{l}^{\bar{o}^1}k^2h^2\bar{a}^2\bar{l}$; **Charwoche** $k^2h^2\bar{a}^2rw^{\bar{o}^2}h^2\bar{o}^1$.

8) *g* voiced mediopalatal fricative: **bogen**.

9) *h*² voiceless mediopalatal fricative: **ach**; **Bacchus** (only Greek and Latin words); **bog**; ***Brahma**, ***Schah** $\bar{s}^2a^2h^2$ (only Persian and Indian words).

10) *n* voiced mediopalatal nasal: **sang** $sa^2\bar{n}$; **Ingo** $i^2\bar{n}^2g^{\bar{o}^1}$; **Magnet** $m^1a^2\bar{n}^2\bar{e}^1t$.

11) *n* voiceless mediopalatal nasal: **sank** $sa^2\bar{n}^2k$.

12) *j* voiced prepalatal fricative: **ja**; **biegen**; **loyal**, **Champagner** $\bar{s}^2a^2m^1p^1h^2\bar{a}^2nj^2$, **Bataille** $ba^2t^2h^2\bar{a}^2lj^{\bar{o}^1}$ (only foreign words).

13) *h*¹ voiceless prepalatal fricative: **ich**; **biegt**; **Mexico** (only Spanish words); **Detail** $de^2t^2h^2\bar{a}^2lh^1$ (only French words).

14) *d* voiced alveolar occlusive: **drei**; **Widder** (only Low German words).

15) *t* voiceless alveolar occlusive: **treu**; **Rad**; **Stadt**; **Thron**; **Ritter**.

th voiceless alveolar aspirate; **tot** $t^2h^{\bar{o}^1}t$; **Thema** $t^2h^{\bar{e}^1}m^{\bar{a}^2}$.

ts voiceless alveolar affricate: **zehn**; **Cigarre**; **Rätsel**; **Bads**; **Katze**; **Skizze**; **Nation** $na^2t^2s^2k^2\bar{o}^1n$ (only Romance words); ***Czar** (only Slavic words).

tš voiceless alveolar affricate: **Kutsche**; **Check** (only English words); ***Cicerone** (only Italian words); ***Czechen** (only Slavic words).

16) *z* voiced alveolar fricative: **lese**; **Gaze** $g^{\bar{a}^2}z^{\bar{o}^1}$ (only foreign words).

17) *ž* voiced alveolar fricative: **Journal**, **genieren**, **Sergeant** $\bar{s}e^2r^2\bar{z}^2\bar{a}^2\bar{n}^2t$ (only Romance words).

18) *s* voiceless alveolar fricative: **las**; **reiszen**; **Wasser**; **Announce**, **Façon**, **Bronze** (only foreign words). *s* as second part of the affricate *ts* (n^o 14).

§ the voiceless alveolar fricative in a sonantal function: ist's $\text{ɪ}^2\text{ʃ}^2\text{tʃ}$.

18) § voiceless alveolar fricative: **schon**; **stark**; **Chef** (only French words); **Shawl** (only English words).

§ as second part of the affricate tʃ (n^0 14).

§ in sonantal function: **hsch** hʃ .

19) l voiced alveolar lateral: **lang**; **schalle**.

l the same sound in sonantal function: **Handel** $\text{h}^2\text{a}^2\text{n}^2\text{d}^2\text{l}$; **Ischl** $\text{ɪ}^2\text{ʃ}^2\text{l}$.

20) l voiceless alveolar lateral: **klang** $\text{k}^1\text{l}^2\text{a}^2\text{n}$; **schallt** $\text{ʃ}^2\text{a}^2\text{l}^2\text{t}$.

21) n voiced alveolar nasal: **Bunde**; **rennen**; **Compagnon** $\text{k}^1\text{h}^2\text{o}^2\text{m}^1\text{p}^1\text{a}^2\text{n}^2\text{j}^2\text{o}^2$ (only French words, but ***Compagnie** = $\text{k}^1\text{h}^2\text{o}^2\text{m}^1\text{p}^1\text{a}^2\text{n}^2\text{i}^1$).

n the same sound as sonant: **binden** $\text{b}^1\text{i}^2\text{n}^2\text{d}^2\text{n}$.

22) n voiceless alveolar nasal: **bunt** $\text{b}^1\text{u}^2\text{n}^2\text{t}$; **rennt** $\text{r}^2\text{e}^3\text{n}^2\text{t}$.

23) p^2 voiceless labiodental occlusive: **Apfel**.

p^2f voiceless labiodental affricate: **Apfel**.

24) w voiced labiodental fricative: **wahr**; **Sklave**.

25) f voiceless labiodental fricative: **fahr**; **Schiffe**; **viel**; **Philosoph**; **Löwehen**. f as second part of the affricate p^2f (no. 23).

26) m^2 voiceless labiodental nasal: **Dampf** $\text{d}^2\text{a}^2\text{m}^2\text{p}^2\text{f}$; **fünf** $\text{f}^2\text{u}^2\text{m}^2\text{f}$.

27) b voiced bilabial occlusive: **Blatt**; **Krabbe** (only Low German words).

28) p^1 voiceless bilabial occlusive: **platt**; **Knappe**; **Weib**.

p^1h voiceless bilabial aspirate: **Pack** $\text{p}^1\text{h}^2\text{a}^2\text{k}$.

29) b voiceless bilabial fricative: **zwar** $\text{tʃ}^2\text{b}^2\text{a}^2\text{r}$; **Qual** $\text{k}^1\text{b}^2\text{a}^2\text{l}$.

30) m voiced bilabial nasal: **März**; **schwimme**.

m the same sound as sonant: **Atem** $\text{a}^2\text{t}^2\text{m}$.

31) m^1 voiceless bilabial nasal: **Schmerz** $\text{ʃ}^2\text{m}^1\text{e}^2\text{r}^2\text{tʃ}$; **schwimmt** $\text{ʃ}^2\text{b}^1\text{i}^2\text{m}^1\text{t}$.

18. As to the obstacles, which play a part in forming a consonant — whether oral or nasal —, we have to distinguish between **place of interception** (**Hemmungsstelle**) and **mode of interception** (**Hemmungsart**). By place of interception is meant the place,

Place and
mode of
interception.

where the breath finds an obstacle and undergoes an alteration, i. e. where the consonant is formed; the term mode of interception denotes the nature of the deviations from the organic basis of the organs of speech, whilst the breath is passing them, i. e. how the consonant is formed.

For the formation of the consonants of standard N. H. G. the following seven places of interception are to be taken into account:

19. I. The **laryngeal place of interception**. The vocal chords themselves produce two consonants: *h*, as in Hen, Oheim (cf. §§ 11, 3. 34. Fig. VI 3); and the **glottal stop** or **glottal check** (**Kehlkopfverschluszlaut**) (cf. §§ 11, 5. 28. Fig. VI 5), which remains unmarked in writing, and for which we use the phonetical symbol ? : Abart $\text{:}\acute{a}^2p^1\text{:}\acute{a}^2rt$.

20. II. The **uvular place of interception**. At this the trilling uvula beats against the foramen caecum near the root of the tongue and so the *r* (as in rauh, Rhein) and *r* (as in traue) is formed, as it is pronounced in the larger North German towns and also in the elegant dramas on the stage; Fig. VIII.

Note 1. For the pronunciation in a pathetic highly classical drama is absolutely prescribed an *r*, which is formed by the tip of the tongue at the alveoli, and which is spoken besides by the countrypeople of North Germany and by all the South Germans and Austrians. The uvular *r* was substituted for the alveolar in Germany only about 150 years ago, but it is steadily gaining ground and is to be considered the *r* of the educated classes of North Germany; on that account I set it up as the standard German *r*, in accordance with the principle, laid down in § 7, without thereby condemning the alveolar *r*.

Note 2. The English *r* has an alveolar articulation, with the exception of the Northumbrian burred *r*, which is uvular.

21. III. At the **mediopalatal place of interception** the effective factors are on the one hand the front part of the soft palate, on the other hand the back part of the tongue; the sounds of this group have accordingly a dorsal articulation (Fig. IX). They

are: *g* as in Gold, *k* as in kund, *g* as in Wagen *wá²gn*, *h²* as in wachen *wá²h²n*, *w* as in sang *zā²w*, *w* as in sank *zā²w²k*.

Note 1. *g* written as *g*, occurs only after one of the back vowels *a*, *o*, *u*, or *au* (*u²o²*) if it is followed by an *i* (as in Tragik *trá²gi²k*, logisch *ló¹gi²š*); or by an *o¹* (an unaccentuated *e* sound) as in Woge *wó¹go¹*, Auge *á²o²go¹*; or by an *r*, *l*, *m*, *n*, belonging to the stem of the word, if they have arisen from an original *or*, *ol*, *om*, *on*, e. g. Wagner, *wá²gnr*, magrer *mágrr*, Vogler *fó¹glr*, kugle *kḥú¹gl*, Kugel *kḥúgl*, Wagen *wá²gn*, mager *má²gr*, klugem *kḥú¹gm*.

Note 2. *h²*, written as *ch*, *g* and *h*, appears in German words only after *a*, *o*, *u*, *au* in the middle or at the end of a word: sprach *šp¹rā²h²*, Sprache *šprá²h²o¹*, Loch *lo²h²*, Loche *ló²h²o¹*, Buch *bū¹h²*, buchen *bú¹h²n*, Rauch, raucht, rauchen *rú²o²h²n* (but not in Frauchen *frá²o²h¹n*, for the suffix *-chen* always contains *h¹*); the spelling *g* for this sound appears only at the end of a word or a syllable: Tag *thā²h²*, Tags *thā²h²s* (but Tage, Tages *Tagen thā²go¹*, *thā²go¹s*, *thā²gn*), bog *bō¹h²*, Flugs (= Fluges) *flū¹h²s*, fragte *frá²h²to¹*, fraglich *frá²h²li²h¹*; also in some foreign words, like Katalog *kḥā²to¹lō¹h²*, Humbug *hú²mbū²h²*; *h* appears only in some Persian and Indian words, like *Schah *šā²h²*, *Brahma *brā²h²m¹ā²*. In foreign expressions the sound *h²* is found also at the beginning of a word before *a*, *o*, *u*, *au* or a consonant: *Charkow *h²ā²rko²f*, *Chaldäa *h²ā²ldē²ā²*, *Chaos *h²ā²o¹s*, *Charon *h²ā²ro¹n*, *chthonisch *h²to¹ni²š*.

22. IV. The **prepalatal place of interception** is made by the articulation of the middle part of the body of the tongue towards the hard palate; the sounds are accordingly dorsal (Fig. X). There are only two sounds in this class: *j* (as in jung *ju²w*) written by *j* and *g*, and *h¹* (as in spreche *šp¹rē²h¹o¹*) written by *ch* and *g*.

Note 1. The sound *j* is expressed in writing by *g*: a) between a preceding front vowel (as *e*; *i*; *ä*; *ö*; *ü*; *ei* [*o²e²*]; *eu*, *äu* [*o²ü²*]) on the one hand and a following *i*, *o¹*, *r*, *l*, *m*, *n*, belonging to the stem of the word (if the last four have arisen from an original *or*, *ol*, *om*, *on*) on

the other hand; e. g. lege $l\acute{e}^1j\partial^1$, läge $l\acute{e}^2j\partial^1$, lüge $l\bar{u}^1j\partial^1$, liege $l\bar{i}^1j\partial^1$, löge $l\bar{o}^1j\partial^1$, benge $b\partial^2\ddot{u}^2j\partial^1$, Segen $z\acute{e}^1j\eta$, segnen $z\acute{e}^1j\eta\eta$, feigem $f\acute{\partial}^2\acute{e}^2j\eta$, äugle $\partial^2\ddot{u}^2j\partial^1$, hüglig $h\bar{u}^1j\bar{l}^2h^1$, zweitägig $t\acute{s}\bar{b}\partial^2\acute{e}^2t\bar{h}\acute{e}^2j\bar{i}^2h^1$. The j sound also appears if a preceding i is dropped, as in ew'ger $\acute{e}^1w\bar{g}r$, Kön'ge $k\bar{h}\bar{o}^1n\bar{g}^1$ = ewiger, Könige;

b) if it is preceded by r or l and followed by one of the sounds mentioned under (a); e. g. Berge $b\acute{e}^2rj\partial^1$, borge $b\partial^2rj\partial^1$, Borger $b\partial^2rj\bar{r}$, folge $f\partial^2lj\partial^1$, folgen $f\partial^2lj\eta$, Burgen $b\bar{u}^2rj\eta$.

Note 2. h^1 appears a) in the middle or at the end of a word after the front vowels: sprich $\acute{s}p^1r^1i^2h^1$, spreche $\acute{s}p^1r^1\acute{e}^2h^1\partial^1$, spräche $\acute{s}p^1r^1\acute{e}^2h^1\partial^1$, Sprüche $\acute{s}p^1r^1\ddot{u}^2h^1\partial^1$, Sträucher $\acute{s}t^1r^1\partial^2\ddot{u}^2h^1\bar{r}$, Löcher $l\bar{o}^2h^1\bar{r}$, Echo $\acute{e}^2h^1\bar{o}^1$; lüg $l\bar{u}^1h^1$, lügt $l\bar{u}^1h^1t$, beug $b\partial^2\ddot{u}^2h^1$, beugt $b\partial^2\ddot{u}^2h^1t$, Feigling $f\acute{\partial}^2\acute{e}^2h^1\bar{l}^2\eta$, Ereignis $\partial^1r^1\partial^2\acute{e}^2h^1\bar{n}^2s$; also in the diminutive suffix -chen, which was in many cases preceded by a front vowel, Hündchen $h\bar{u}^2\eta t h^1\eta$, Frauchen $f^1r^1\partial^2\eta t h^1\eta$, Mammachen $m\bar{a}^2m\bar{a}^2h^1\eta$ (but rauchen $r\partial^2\eta t h^1\eta$, *Aachen $\acute{a}^2h^2\eta$ with h^2);

b) in the middle and at the end of a word after r , l , n , e. g. manch(e) $m\bar{a}^2\eta h^1(\partial^1)$, Kirche $k\bar{h}i^2r h^1\partial^1$, soleh(e) $z\partial^2l h^1(\partial^1)$, Monarch(en) $m\partial^1n\bar{a}^2r h^1(\eta)$, Berg $b\acute{e}^2r h^1$, Borg $b\partial^2r h^1$, borgt $b\partial^2r h^1t$, folgt $f\partial^2l h^1t$, Balg $b\bar{a}^2l h^1$, Burg $b\bar{u}^2r h^1$;

c) at the beginning of foreign words and Old German proper nouns before front vowels: China $h^1i^1n\bar{a}^2$, Chemie $h^1\acute{e}^1m\bar{a}^1$, Chirurg $h^1i^1r\bar{u}^2r h^1$, Cherson $h^1\acute{e}^2r\bar{s}\partial^2n$, Childerich $h^1i^2l\partial^1r\bar{i}^2h^1$, Cherusker $h^1\acute{e}^2r\bar{u}^2\bar{s}k^1r$.

Note 3. k and g before front vowels, as in kenne, Kind, künde, geben, gibt, gönnen, and ∂ after front vowels, as in sänge, sing are in standard German, in spite of the front vowels, not prepalatal, but mediopalatal, although in these cases the articulation of k , g and ∂ is removed forward as far as the boundary of the hard palate.

Note 4. For the sounds of the prepalatal and the mediopalatal groups is often employed the name "guttural", a term to be avoided as misleading, for these sounds are formed in the palatal region of the mouth, by no means in the "guttur" (= throat).

23. V. The **alveolar** or **supradental** place of **interception** is formed by the articulation of the front part of the tongue towards the alveoli of the upper teeth.

The sounds of this class are partly coronal, partly lateral, partly dorsal (Fig. XI—XIII). Coronal are *d* (as in *drei*), *t* (as in *treu*), *n* (as in *neu*), *ɲ* (as in *bunt bu²ɲt*); coronal-lateral are *l* (as in *Land la²ɲt*), *ɭ* (as in *alt a²ɭt*); dorsal are *z* (as in *Reise rə²zə²*), *ʃ* (as in *was wa²ʃ*), *ʒ* (as in *Journal žu²rnāl*), *ʒ̥* (as in *schon ʃō¹n*).

Alveolar
place of
interception.

Note 1. The term “dental” is too vague and not quite applicable to the German sounds, as they are formed above the teeth, which in this case do not play any part at all.

Note 2. The place of articulation of the English alveolar sounds lies slightly higher than that of the German ones. The English *d*, *t* and *n* have a dorsal, *l* a dorsal-lateral articulation.

24. VI. The **labiodental** place of **interception** is produced by the underlip and the upper teeth (Fig. XIV).

This class is represented in German by: *p²* (as in *Apfel a²p²f*), *w* (as in *wahr wā²r*), *f* (as in *fahre fā²rə¹*), *m²* (as in *Dampf da²m²p²f*).

Labiodental
place of
interception.

Note 1. *p* and *m*, which are usually formed at the labiolabial place of interception, are, however, pronounced as labiodentals before a following *f*, *m* also before a following labiodental *p²* (as in *Dampf da²m²p²f*, *empfehlen ə¹m²p²fē¹lɥ*, *Triumph trī²ú²m²f*, *Nymphen nū²m²fə¹*); *m²* is expressed in writing either by *m*, as in the examples above, or by *n*, as in *fünf fū²m²f*, *künftig kḥū²m²f^{ti}h¹*, *sanft za²m²f^t*, *Senf ze²m²f*. *bf* in compounds represents *p²f*, as in *Abfall a²p²fā²l*, *Erbfeind ə²p²fə²e²ɲt*.

Note 2. More exactly these sounds ought to be called **bilabiodental**, for the upper lip also plays a slight part in forming them, as it prevents the breath from escaping between the upper teeth, which seldom stand so close to each other that they could form an air-tight bar.

25. VII. At the **bilabial** or **labiolabial** place of **interception** both lips are active (Fig. XV). Here we have the sounds *b* (as in *Bein*), *p¹* (as in *Pein*), *ɸ* (as in *zwar tʃɸā²r*), *m* (as in *mal mā²l*), *m¹* (as in *schmal ʃm¹ā²l*).

Bilabial
place of
interception.

Note 1. The bilabial *ɸ* is written as *w* and *u* and occurs

only after the sounds *š, t, s, ts, k*: schwand *šḅa²nt* (but wand *wa²nt*), *Twing *ṭḥi²n*, *Swine(münde) *šḅi¹nə¹*; *Suewen *šḅé¹wn*, zwar *ṭšḅā²r* (but war *wā²r*), Qual *ḳḅā²l* (but Wahl *wā²l*), Quadrat *ḳḅa²drá²t*, *Biskuit *bi²sḳḅi¹t*.

Note 2. *ḅ* must not be identified with the English *u*, written as *w* in war or as *u* in queen, which is a sound formed by raising the back part of the tongue, whilst with the German *ḅ* the tongue remains absolutely passive.

26. The **modes of interception** can be divided into five groups from the following points of view. If we form a sound:

The five
modes of
interception.

1) Provided the nasal cavity is closed, the breath meets a complete occlusion in the mouth (in one case in the throat itself); ultimately the occlusion is more or less violently opened (**occlusive sounds, Verschluss-laute**).

2) Provided the nasal cavity is closed, in the median line of the mouth (in one case in the throat itself) a very narrow passage is formed by two organs opposite to each other; the breath has to escape through this narrow passage and, in doing so, produces a rubbing noise (**fricative sounds, Reibelaute**).

3) If the nasal cavity is closed, the breath produces a trilling of a part of the organs of the mouth in the median line; thereby is produced alternately an occlusion and an opening, and the breath escapes in quick succession in single small puffs (**trills, Zitterlaute**).

4) Provided the nasal cavity is closed, in the median line of the mouth the breath meets an occlusion, which will not be opened, the breath having to escape through an opening on one or on both sides of the mouth (**lateral sounds, Laterallaute**).

5) Provided the nasal cavity is open, in the mouth the breath meets a complete occlusion, which will not be opened, the breath having to escape through the nasal cavity (**nasal sounds, Nasale**).

Note. Although simultaneously with the trills and lateral sounds a rubbing noise can occasionally appear — viz., if the opening is made so slight that the breath rubs against its edges — we are not justified in considering the trills and

lateral sounds to be a subdivision of the fricative sounds, for trills and lateral sounds are formed as a rule without any noise, as pure "sonorous" sounds. The rubbing noise can appear with them as a secondary moment, but it is not essential for their constitution. On the other hand, if we wish to keep the physiological production as principle of classification for the consonants too, we must not call the sounds of the 3, 4, 5 groups "liquid" or "sonorous" sounds, i. e. sounds which are characterised like the vowels by a pure, noiseless, musical tone (Klang), for the expressions "liquid", "sonorous" refer only to their acoustic effect, not to their physiological genesis; besides these sounds are not only voiced: they occur also as voiceless, e. g. alt $\text{a}^2\text{!t}$, meint $\text{m}^2\text{e}^2\text{nt}$, Engl. felt $\text{f}^2\text{!t}$, meant $\text{m}^2\text{e}^2\text{nt}$.

27. I. In the oral **occlusive sounds (explosives, explosive sounds, stops, Momentanlaute, Explosivlaute, Verschlusslaute)** we have to distinguish between three consecutive acts: 1) making the occlusion; 2) persisting in occlusion i. e. a longer or shorter perfectly soundless and noiseless pause; 3) opening the occlusion or explosion. It is in the nature of these sounds that they last only a moment (hence Momentanlaute) and can not be continued, as distinguished from the consonants of the four other modes of interception. They can be lengthened only by lengthening the soundless and noiseless pause.

Occlusive
sounds
in general.

28. The only occlusive sound which is formed in the throat itself is the **laryngeal occlusive sound (glottal stop, glottal catch, check glottid, Kehlkopfverschlusslaut)**, cf. § 11, 5; in pronouncing this sound the glottis is firmly closed and is then forced open by the breath. The sound thus produced is a very weak one, but can be perceived distinctly, if we whisper; in its extreme form it is known as a cough. This sound is not expressed in writing, but as phonetical symbol we use ? . A word beginning with a vowel, and a syllable beginning with an accented vowel are preceded by this consonant: Abart $\text{a}^2\text{p}^1\text{:a}^2\text{rt}$, eine alte Uhr $\text{e}^2\text{a}^2\text{n}^1\text{:a}^2\text{!t}^1\text{u}^1\text{r}$, ererbt $\text{e}^2\text{a}^1\text{r}^1\text{:e}^2\text{r}^1\text{p}^1\text{t}$. A few stressed monosyllabic words which end in a short vowel, as the doubting ja $\text{j}^2\text{a}^2\text{?}$ and the impatient na $\text{n}^2\text{a}^2\text{?}$ and da $\text{d}^2\text{a}^2\text{?}$, show this sound also after the vowel. In

Laryngeal
occlusive
sound;
Fig. VI 5.

the cross *nein* $ːnə^2\epsilon^2n$ and *na* $ːna^2$; even the consonant **n** is preceded by this sound.

Note 1. $ː$ which corresponds to the Hebrew aleph, and which appears in some languages, as in Danish and Lithuanian, also in the middle of a syllable or a sound (cf. Dan. *maler* $ma^2:lə^1r$ = (he) paints, but *måler* $ma^2:lə^1r$ = painter), is missing altogether in standard English; but it exists in Scotch, Sheffield, and Lincoln pronunciation, and has existed in Anglo-Saxon, as can be proved from the treatment of the vowels at the beginning of a word in the Old Teutonic poetry, where to all appearance any vowel can alliterate with any other vowel, but in reality the alliteration is formed by the preceding glottal stop, e. g. *Béowulf* 33: *isiȝ ond útfús | æðelinȝes fæ̃r*.

Note 2. 1) Unaccentuated vowels in the middle of a word or a stressgroup are not preceded by a glottal stop, e. g. *Ehe* $ː\epsilon^1\partial^1$, *sähen* and *säen* $z\epsilon^2\partial^1n$, *will ich* $wi^2li^2h^1$, *will es* $wi^2l\epsilon^1s$, especially if an ∂^1 is dropped, as in *würd' ich* $wü^2rdi^2h^1$, *Freud' und Leid* $fró^2\ddot{u}^2du^2nt|l\acute{o}^2\epsilon^2t$. 2) No glottal stop is spoken in the following stressed adverbial compounds with *her-*, *hin-*, *vor-*, *dar-*, *war-*, *wor-*, *wie-* *der*, e. g. *herein* $h\epsilon^1r\acute{o}^2\epsilon^2n$, *hinaus* $hi^2n\acute{o}^2\epsilon^2s$, *voran* $f\grave{o}^1r\acute{a}^2n$, *daran* $d\grave{a}^2r\acute{a}^2n$, *warum* $w\grave{a}^2r\acute{u}^2m$, *woran* $w\grave{o}^1r\acute{a}^2n$, *wiederum* $wi^1d\ddot{r}\acute{u}^2m$; nor in the following compounds and pseudo-compounds: **einander* $ː\partial^2\epsilon^2n\acute{a}^2nd\ddot{r}$, **selbander* $z\epsilon^2lb\acute{a}^2nd\ddot{r}$, **allein* $\acute{a}lb\acute{o}^2\epsilon^2n$, **wohlan* $w\grave{o}^1l\acute{a}^2n$, **vollenden* $f\grave{o}^2l\acute{e}^2nd\ddot{n}$, **erinnern* $\acute{e}r^1ri^2n\ddot{n}$, **erobern* $\acute{e}r^1r\acute{o}b\ddot{r}$, **Obacht* $\acute{o}^1b\acute{a}^2h^2t$, **Hebamme* $h\epsilon^1b\acute{a}^2m\acute{a}^1$, *Einöde* $\acute{e}^2\epsilon^2n\acute{o}^1d\acute{a}^1$. 3) In compounds borrowed from foreign languages, as e. g. *Interesse* $i^2nt\ddot{r}\acute{e}^2s\acute{a}^1$, or other foreign words, as *Oase* $\acute{o}^1\acute{a}^2z\acute{a}^1$, *Theater* $t\acute{e}^1\acute{a}^2t\ddot{r}$, *Ocean* $\acute{o}^1t\acute{s}\acute{e}^2\acute{a}^2n$, *Ruine* $r\acute{u}^1i^1n\acute{a}^1$, *Michaelis* $mi^2h^1a^2\acute{e}^1li^2s$, usually no glottal stop is spoken, although the following vowel is stressed.

29. With the **mediopalatal occlusive sounds** *g* and *k* the occlusion is formed by the front part of the soft palate and the back part of the body of the tongue; cf. § 21.

Mediopalatal
occlusive
sounds;
Fig. IX.

Note 1. The letter **g** represents the occlusive sound only 1) at the beginning of a word and at the beginning of an accentuated syllable: *gegangen* $g\acute{a}^1g\acute{a}^2n$, *Religion*

rèlì¹gì¹n, regieren *re²gì¹rn*, Ägypten *æ²gû²p¹tn*, Dragoner *drâ²gô¹nr*, Agent *æ²gê²nt*, Riga *rì¹gâ²*, Rigi *rì¹gî¹*; 2) before consonants in Greek and Latin words, as in Segment *ze²gmê²nt*, Dogma *dô²gmâ²*, Pilgrim *p¹hî²lgri²m*, Kongress *k^hô²ægrê²s*; 3) in words with **gg** borrowed from Low German, as Dogge *dô²gø¹*, Flagge *flâ²gø¹*, Schmuggel *šm¹û²gl*, Roggen *rô²gn*; 4) in foreign words with **gu**, e. g. Guirlande *gî¹rlâ²nda²*, intriguieren *æ²ntri¹gî¹rn*, Drogue *drô¹gø¹*.

In all the other cases the letter **g** denotes the prepalatal and mediopalatal fricative sounds *j* or *g* or *h¹* or *h²*; cf. §§ 21 note 1, 2. 22 note 1, 2. 35. 36. 51, 1, 2. **Exceptions** are a) the group -gig, in which, if the **i** is dropped, the first **g** is pronounced as *g*, the second as *j*, e. g. bog'ges *bô¹gjø¹s*, zweitäg'ges *tšbô²æ²thê²gjø¹s* (but bogiges *bô¹gi²jø¹s*, zweitägiges *tšbô²æ²thê²ji²jø¹s*); b) **g** represents the voiceless occlusive sound *k* in *Augsburg *æ²ø²kšbù²r^h¹*, *flugs *flû²kš* (but Flugs *flû¹h²s*), *bugsieren *bû¹kšî¹rn*, *Grog *gro²k*, *Grogs *gro²kš*, *Logbuch *lô²k^hbû¹h²*; *k* is also represented by **gg** at the end of a word or before a consonant, e. g. flaggt *flâ²kš*, Brigg *bri²k*, cf. § 50.

Note 2. In certain cases *k* is expressed in writing by **ch**, namely a) in some foreign words such as *Charakter *kæ²râ²ktr*, *Christ *kri²st*, *Christus *kri²st^us*, *Chronik *kro¹ni²k*, *Chrom *kro¹m*, *Cholera *k^hô¹le²râ²*, *Chor *k^hô¹r*, *Choral *k^hô¹râ²*, *Melancholie *mê²la²økô¹lî¹*, *Marchese *mâ²r^hhê¹zø¹*; b) in some German words as *Charfreitag *k^hâ²r^hæ²thâ²h²*, *Charwoche *k^hâ²r^hwô²h²ø¹*, *Chemnitz *k^hê²mni²tš*, *Chlodwig *k^hlô¹dwi²h¹*, and especially in the group **chs**, if no vowel is dropped between **ch** and **s**, e. g. Wechsel *wé¹kšl*, Ochse *økšø¹*, Sachsen *zâ²kšg*, Fuchs *fu²kš*, sechs *ze²kš*, Dachs *da²kš* (badger, dachshund, but des Dachs *da²h²s* of the roof), wächst *we²kš* (you grow, but wächst *wa²h²st* you are awake; for the same reason *nächste *nê²h¹stø¹*, *höchste *hō¹h¹stø¹* with *h¹*; *h²* likewise in wachsam *wâ²h²šâm*).

The letter **x** always contains a *k*; e. g. Examen *æ²kšâ²m*, Alexander *æ²le²kšândr*, exact *æ²kšâ²kš*. At the end of French words **x** is not pronounced, e. g. Bureaux *bû¹rø¹*.

30. With the **alveolar occlusive sounds** *d* and *t* the occlusion is made by the alveoli of the upper teeth and the front edge of the tongue, cf. § 23. *d* and *t* are not sounded at the end of French words like *Fond* *fō̃²*, *Dessert* *dẽ²sé̃²r*, *Tricot* *tr̃¹¹k̃hō̃¹*.

Alveolar
occlusive
sounds;
Fig. XI.

Labiodental
occlusive
sound;
Fig. XIV.

31. With the **labiodental occlusive sound** *p²* the underlip forms an occlusion with the upper teeth. This sound does not occur in English, cf. § 24.

32. With the **bilabial occlusive sounds** *b* and *p¹* both lips form the occlusion, cf. § 25. *p¹* is not sounded at the end of French words like *Coup* *k̃hū̃¹*, *Corps* *k̃hō̃¹r*.

Bilabial
occlusive
sounds;
Fig. XV.

33. II. The oral **fricative sounds (open consonants, spirants, Reibelaute)** are produced, when two organs, opposite to each other, do not make a complete occlusion, but only approach each other, so that the breath is pressed through a narrow passage and thus produces a rubbing noise. The friction is here in the same relation to the narrow passage, as with the occlusive sounds the explosion to the occlusion. In common with the sounds of the 3rd, 4th, and 5th modes of interception, the fricative sounds possess the property of being continuable at will, as long as there is breath in the lungs (hence **Dauerlante**). The combination of an occlusive sound with a homorganic fricative sound is called **affricate**. In modern German there exist two affricates: *p²f* and *tʃ* (mostly written *z* and *c*; cf. § 37 note 4); besides *tʃ* (cf. § 37 note 6), which occurs only in borrowed words.

Fricatives
in general;
affricates.

34. The **laryngeal fricative (glottal fricative, Hauchlaut)** *h* is formed in the throat itself by the approaching of the vocal chords to each other in such a degree, that the breath rubs against their edges, without, however, making them vibrate; cf. § 11, 3.

Laryngeal
fricative;
aspirates;
Fig. VI 3

It seems, however, a little questionable, whether by articulating the German *h* the glottis is actually more narrowed than in articulating any other voiceless consonant; an increased force of expiration could in itself be sufficient to produce the rubbing noise; cf. § 11, 2. That in articulating an *h* the force of expiration is actually increased, is shown by the fact that the German *h* is only pronounced if the follow-

ing vowel has the stress, i. e. if a more intensive expiration takes place, if the vocal chords are struck by a more energetic breath: halten $h\acute{a}^2t\eta$, anhalten $\acute{a}^2nh\acute{a}^2t\eta$, Oheim $\acute{a}^2h\acute{a}^2\acute{e}^2m$, Rauhheit $r\acute{a}^2\acute{e}^2h\acute{a}^2\acute{e}^2t$, Hoheit $h\acute{a}^2h\acute{a}^2\acute{e}^2t$ (but ruhe $r\acute{a}^2\acute{a}^2$, sehe $\acute{z}\acute{e}^2\acute{a}^2$, fahre $f\acute{a}^2r\acute{a}^2$, stehle $\acute{s}t\acute{e}^2l\acute{a}^2$). Under the same condition also after p^1 , t , k an h is pronounced, no matter whether it is written or not: kund $k\eta u^2\eta t$, local $l\acute{o}^2k\eta\acute{a}^2l$, Eitelkeit $\acute{e}^2\acute{e}^2t\eta k\eta\acute{e}^2\acute{e}^2t$, Chemnitz $k\eta\acute{e}^2mn\acute{i}^2t\acute{s}$, Tricot $t\eta i^2k\eta\acute{o}^2$; Teil $t\eta\acute{e}^2\acute{e}^2l$. Thema $t\eta\acute{e}^2m\acute{a}^2$, Lot(h)ar $l\acute{o}^2t\eta\acute{a}^2r$, Italien $\acute{i}^2t\eta\acute{a}^2l\acute{i}^2n$, Antipathie $\acute{a}^2\eta t\acute{i}^2p^1\acute{a}^2t\eta\acute{i}^2$, Bert(h)a $b\acute{e}^2r\eta\acute{a}^2$, Bert(h)old $b\acute{e}^2r\eta\acute{h}\acute{o}^2t\eta$; Pein $p^1h\acute{e}^2\acute{e}^2n$, Papier $p^1\acute{a}^2p^1h\acute{i}^2r$. But before an unstressed vowel h is not sounded, e. g. Walt(h)er $w\acute{a}^2t\eta r$, Zither $\acute{z}i^2t\eta r$.

An occlusive sound, followed by an h , is called **aspirate** ($k\eta$, $t\eta$, $p^1\eta$), and must be carefully distinguished from a **fricative** (like h , s , \acute{s} , η or Engl. th , f) and from an **affricate** (like $p^2\acute{f}$, $t\acute{s}$, $\acute{t}\acute{s}$); cf. § 33.

In a word pronounced with great excitement an h^1 or h^2 is sometimes substituted for the h of the aspirate: e. g. keiner ($k\eta\acute{e}^2\acute{e}^2n\eta r$) war da! zum Teufel ($t\eta\acute{h}\acute{o}^2\acute{e}^2t\eta$)!

Note 1. h is not pronounced in foreign words with **rh**, **rrh**, and **gh**, as Rhenma, Rhein, Katarrh, Ghetto; the aspiration of k , t , p^1 is suppressed, if these consonants in the same syllable are preceded or followed by another consonant: kahl $k\eta\acute{a}^2l$, Chor $k\eta\acute{o}^2r$ but Qual $k\eta\acute{a}^2l$, Skizze $\acute{s}k\acute{i}^2\acute{z}\acute{s}^2$, Chlor $k\eta\acute{l}\acute{o}^2r$; teile $t\eta\acute{e}^2\acute{e}^2l\acute{a}^2$, but steile $\acute{s}t\acute{e}^2\acute{e}^2l\acute{a}^2$, Zeile $\acute{z}\acute{s}^2\acute{e}^2l\acute{a}^2$; Tier $t\eta\acute{i}^2r$, but Stier $\acute{s}t\acute{i}^2r$, Zier $\acute{z}\acute{s}^2i^2r$, tren $t\eta r\acute{o}^2\acute{e}^2$; Ton $t\eta\acute{o}^2n$, but Thron $t\eta r\acute{o}^2n$; Paare $p^1\eta\acute{a}^2r\acute{a}^2$, but spare $\acute{s}p^1\acute{a}^2r\acute{a}^2$, prasseln $p^1r\acute{a}^2\acute{s}l\eta n$.

Note 2. An aspiration of k , t , p^1 at the end of a word takes place occasionally, viz. if an especially strong emphasis is laid on the word, i. e. if we have to do with a very energetic expiration, in this case preceding the consonant: In seinen | Armen das | Kind war | $t\acute{o}t\eta t\eta\acute{o}^2t\eta$.

Note 3. Those who do not admit that h has the character of a fricative might take it as a voiceless vowel, but this view is not often in agreement with the actual pronunciation of h in N. H. G.: cf. § 58 note.

35. With the **mediopalatal fricatives** g and h^2 the narrow passage is made by the back

Mediopalatal
fricatives;
Fig. 1X.

part of the body of the tongue and the front part of the soft palate.

Note 1. These sounds do not occur in English.

Note 2. *g* never appears at the beginning of a word, but only in the middle or at the end, after the back vowels, and is always expressed in writing by the letter *g*, cf. § 21 note 1.

36. With the **prepalatal fricatives** *j* and *h*¹ the middle part of the body of the tongue and the hard palate form the narrow passage, cf. § 22 note 1, 2.

Note. *h*¹ does not occur in modern English; and Engl. *y* in *young* is not identical with Germ. *j* in *jung*, because *y* seems to me to be formed without the narrow passage, essential to fricatives, and is accordingly to be qualified as *i*², an *i* with the function of a consonant, as in Union *æ̇u¹ni²õ¹n*, Familie *fä¹mî¹li²õ¹*; cf. Engl. union *i²ü²u²ni²õ²n*.

37. With the **alveolar fricatives** *z* and *ʃ*, *ž* and *ʒ* the narrow passage is formed by the front part of the tongue and the alveoli of the upper teeth (cf. § 23).

ʃ and *z* differ from *ʒ* and *ž* in the following respects: 1) the articulating part of the tongue lies further backwards with *ʒ* and *ž* than with *ʃ* and *z*; 2) with *ʒ* and *ž* the front part of the tongue shows a comparatively large basin-shaped hollow, whilst with *ʃ* and *z* the tongue in its median line represents a narrow groove or furrow; 3) with *ʒ* and *ž* a second basin-shaped hollow is formed by the lower surface (lower blade) of the tongue and the lower teeth, which is not the case with *ʃ* and *z*; 4) with *ʒ* and *ž* the lips are rounded and projected (pouted), *ʃ* and *z* have accordingly a labialised articulation, whilst with *ʃ* and *z* the lips remain passive.

Note 1. *sch* is not at all a compound sound but represents a unit (*ʃ* cf. kreischen *kʀi¹õ²ʃ²ni* to shriek) and must be carefully distinguished from *s-ch* (*ʃh*¹ in Kreis-chen *kʀi¹õ²ʃ²h¹ni* 'little circle', or in Greek words from *ʃh*², e. g. Eschatologie *æ̇ʃ²h²ä²thõ²lõ¹g¹*). Therefore *ʃ* must not be pronounced with two articulations following upon each other, as by the Westphalians, *ʃh²õ¹n*, *ʃh²ä²f* instead of *ʃõ¹n*, *ʃä²f*. Equally untenable is the view that in pronouncing *ʃ* the tongue has simultaneously the position necessary for *ʃ* and that necessary for *h*, because the combination of these

two positions would never produce as result the two basin-shaped hollows essential for ξ and ζ .

Note 2. The Engl. ξ and ζ (as in fashion, occasion) differ from the German ones especially by the fact that they are pronounced without any rounding and projection of the lips, in accordance with the English organic basis; cf. § 8.

Note 3. The phonetical symbol z is not to be confused with the German letter z ($=t+s$). For the sound z we use in writing throughout the letter s (e. g. Salz $z\alpha^2lts$, Felsen $f\epsilon^2lzn$, lese $l\epsilon^1z\alpha^1$) — except in foreign words, where the letter z appears for it; e. g. Hazard $h\alpha^2z\alpha^2rt$, Zuidersee $z\alpha^2\ddot{u}^2drz\epsilon^1$.

Note 4. The voiceless s forms the second component of the affricate ts , e. g. Rätsel $r\epsilon^2tsl$, Bads ba^2ts ; also written with z , as Zahn $ts\bar{\alpha}^2n$, Zeus $ts\alpha^2\ddot{u}^2s$, Horaz $h\bar{o}^1r\alpha^2ts$, Polizei $ph\bar{o}^1li^2ts\alpha^2\epsilon^2$, *Grazie $gr\alpha^2tsi^2\alpha^1$; with c , e. g. Ceylon $ts\alpha^2\epsilon^2lo^2n$, Cäsar $ts\epsilon^2z\bar{\alpha}^1r$, Dozent $d\bar{o}^1ts\epsilon^2nt$, Officier $\alpha^2fi^1tsi^1r$, Cigarre $tsi^2g\alpha^2r\alpha^1$, Accent $\alpha^2kt\epsilon^2nt$, *Celle $ts\epsilon^2l\alpha^1$, Scene $st\epsilon^1n\alpha^1$, Scepter $st\epsilon^2p^1tr$; with tz , as in Katze $k\bar{h}\alpha^2ts\alpha^1$; with zz , as in Skizze $sk\bar{i}^2ts\alpha^1$; with cz , as in *Czar $ts\bar{\alpha}^2r$; with t before consonantal, unsyllabic i^2 , as in Nation $n\alpha^2tsi^2\bar{o}^1n$, Actie $\alpha^2kt\epsilon^2i^2\alpha^1$, Patient $p^1\alpha^2tsi^2\epsilon^2nt$ (but Partie $p^1\alpha^2rt\bar{i}^1$, Aristokratie $\alpha^2ri^2st\bar{h}\bar{o}^1kra^2th\bar{i}^1$).

s at the end of French words is sounded only in plur. and gen. sg.: das Corps $k\bar{h}\bar{o}^1r$, Palais $p^1\alpha^2l\epsilon^2$, but des, die $k\bar{h}\bar{o}^1rs$, $p^1\alpha^2l\epsilon^2s$.

Note 5. ζ occurs only in foreign words, chiefly borrowed from French, and is expressed in writing by j (*Journal $\ddot{z}u^2rn\alpha^2l$, *Jalousie $\ddot{z}\alpha^2l\bar{u}^1z\bar{i}^1$); or by g , as in *Genie $\ddot{z}\bar{\epsilon}^1n\bar{i}^1$ (but Genius $g\bar{\epsilon}^1n\bar{i}^2u^2s$, genial $g\bar{\epsilon}^1n\bar{i}^2\alpha^2l$, because borrowed directly from Latin), *genieren $\ddot{z}\bar{\epsilon}^1n\bar{i}^1rn$, Page $p^1h\alpha^2\ddot{z}\alpha^1$, *Loge $l\bar{o}^1\ddot{z}\alpha^1$, *Orange $\alpha^2r\alpha^2\ddot{z}\alpha^1$, Courage $k\bar{u}^1r\alpha^2\ddot{z}\alpha^1$, *Giro $\ddot{z}i^1r\bar{o}^1$, *Regie $r\bar{\epsilon}^1\ddot{z}\bar{i}^1$ (but regieren $r\bar{\epsilon}^1g\bar{i}^1rn$), *Giraffe $\ddot{z}\bar{i}^1r\alpha^2f\alpha^1$; or by ge as in *Sergeant $s\epsilon^2r\ddot{z}\alpha^2nt$.

Note 6. ξ is also found in sp and st at the beginning of the root syllable of German words, e. g. spielt $\xi p^1\bar{i}^1t$, Gespenst $g\alpha^1\xi p^1\epsilon^2nst$ (but Knospe $k\bar{n}\alpha^2sp^1\alpha^1$, spielt $\xi p^1\bar{i}^1st$), stiehlst $\xi t\bar{i}^1st$, Stein $\xi t\alpha^2\epsilon^2n$, Gestein $g\alpha^1\xi t\alpha^2\epsilon^2n$;

and in some foreign words which are quite naturalised, as in *Spasz $\$p^1\bar{a}^2s$, *speculieren $\$p^1\bar{e}^2ku^2li^1r\eta$, *Spiegel $\$p^1i^1j\bar{l}$, *spazieren $\$p^1\bar{a}^2t\bar{s}i^1r\eta$, *Spanien $\$p^1\bar{a}^2ni^2\bar{o}^1n$, *Spiritus $\$p^1i^1ri^2t\bar{u}^2s$, *Spion $\$p^1i^1\bar{o}^1n$, *Spediteur $\$p^1\bar{e}^1di^2th\bar{o}^1r$, *Spital $\$p^1i^1th\bar{a}^2l$ (but *Hospital $h\bar{o}^2s\bar{p}^1i^1th\bar{a}^2l$), *Spalier $\$p^1\bar{a}^2li^1r$, *speziell $\$p^1\bar{e}^1t\bar{s}i^2\bar{e}^2l$, *Spektakel $\$p^1\bar{e}^2h\bar{t}\bar{h}\bar{a}^2kl$, *Spezerei $\$p^1\bar{e}^1t\bar{s}\bar{o}^1r\bar{o}^2\bar{e}^2$, *Spinat $\$p^1i^1n\bar{a}^2t$, *Spirale $\$p^1i^1r\bar{a}^2l\bar{o}^1$; *Standarte $\$t\bar{a}^2nd\bar{a}^2rt\bar{o}^1$, *Strapaze $\$tr\bar{a}^2p^1h\bar{a}^2t\bar{s}\bar{o}^1$, *Stuck(atur), $\$t\bar{u}^2k(a^2th\bar{u}^1r)$, *Student $\$t\bar{u}^1d\bar{e}^2nt$, *studieren $\$t\bar{u}^1di^1r\eta$, *Studium $\$t\bar{u}^1di^2u^2m$, *Strophe $\$tr\bar{o}^1f\bar{o}^1$, *Stil $\$t\bar{i}^1l$, *Station $\$t\bar{a}^2t\bar{s}i^2\bar{o}^1n$, *Stockholm $\$t\bar{o}^2kh\bar{o}^2lm$. **sch** is pronounced like $\$$ also in Greek and Latin words which have become quite German, as in *Schema $\$e^1m\bar{a}^2$, *Scholar $\$o^1l\bar{a}^2r$.

$\$$ forms the second part of the affricate $t\bar{s}$, which appears only in foreign words like *Ciccone $t\bar{s}i^1t\bar{s}\bar{o}^1r\bar{o}^1n\bar{o}^1$, *Guttapercha $g\bar{u}^2t\bar{a}^2p^1h\bar{e}^2rt\bar{s}\bar{a}^2$, *Czechen $t\bar{s}\bar{e}^2h^1\eta$, *Check $t\bar{s}\bar{e}^2k$, and in some Slavic words, as Peitsche $p^1h\bar{o}^2\bar{e}^2t\bar{s}\bar{o}^1$, Kutsche $k\bar{h}\bar{u}^2t\bar{s}\bar{o}^1$ and their derivatives.

38. With the **labiodental fricatives** f and w the narrow passage is formed between the underlip and the upper teeth; cf. § 24.

Note. In *Bowle $b\bar{o}^1l\bar{o}^1$, borrowed from English, and in Low German, originally Slavic names ending in **ow** the **w** is not pronounced, as in Böhlow $b\bar{u}^1l\bar{o}^1$, Lützow $l\bar{u}^2t\bar{s}\bar{o}^1$, Gutzkow $g\bar{u}^2t\bar{s}k\bar{o}^1$; whilst in such names in **ow** which are still Slavic **w** is pronounced as f , as in Charkow $h\bar{a}^2rko^2f$, Romanow $r\bar{o}^1m\bar{a}^2no^2f$.

39. With regard to the **bilabial fricative** b , which has its narrow passage between both lips, cf. § 25 note 1, 2.

40. III. In forming the oral **trills** (rolled consonants, **Zitterlaute**) the breath causes to trill some easily flexible part of the mouth, such as e. g. the tip of the tongue or the uvula; this trilling organ touches another part, opposite to it, and transfers the trilling to it in much the same manner as the moving drum-stick produces a movement of the drum-skin. The tongue touches the alveoli and makes them trill; the uvula acts upon the foramen caecum. Accordingly, an occlusion takes place, and as on

Labiodental
fricatives;
Fig. XIV.

Bilabial
fricative;
Fig. XV.

Trills
in general.

account of its elasticity the trilling tip of the tongue or the trilling uvula rebounds into its original position, the occlusion is opened immediately afterwards. The peculiar, rolling character of the trills is due to the fact that the breath is periodically interrupted, and occlusion and opening alternate with each other several times. Although in pronouncing an *r* the same acts of occluding and opening are repeated several times, the sound produces nevertheless an unbroken, unified effect on account of the great rapidity with which the different acts follow upon each other. At least two strokes of the tongue or the uvula are required, in order to produce the impression of a rolled *r*. As to the relation of the German alveolar *r* to the uvular *r* cf. § 20 note 1.

Note. There are several differences between the English and the German alveolar *r*'s. In accordance with the English organic basis (cf. § 8) the tongue is more retracted, the front part of the tongue has a more bulky shape, and in consequence of it the English *r* is not rolled, i. e. only one stroke with the tongue takes place.

41. In pronouncing the **uvular trills** *r* and *r* the back part of the tongue is raised, and in the median line of the tongue there is formed a groove or furrow, in which the uvula unhindered trills against the foramen cecum. If on account of careless articulation the forming of such a median furrow is omitted, a rubbing noise is produced and instead of an *r* an *h*² or *g* sound appears. Uvular trills;
Fig. VIII.

Note 1. *r* is not pronounced at the end of French words: e. g. Bankier *bā²wki²é¹*, Diner *dī¹né¹*, Souper *zū¹p¹hē¹*; but *Barbier *ba²rbī¹r*, *Passagier *p¹hā²sā²zī¹r*, *Kavalier *h¹hā²wa²lī¹r*.

42. IV. With the oral **lateral sounds** (side consonants, **Laterallaute**) the tongue forms an occlusion in the median line of the mouth, but at the same time the middle part of the tongue is removed from the back molar teeth, so that on each side of the mouth an opening for the breath is formed (hence *l* is also called a **divided consonant**); very common, however, are the **unilateral** or **asymmetric l sounds**, in which an opening is made only on one side of the mouth whilst the other side is occluded by the tongue. Lateral sounds
in general.

Alveolar-lateral sounds. 43. The German *l* and *ʎ* are alveolar and form their median occlusion exactly as the alveolar *d* or *t*.

Note. The English *l*, likewise alveolar, differs from the German in the following respects: 1) on account of a hollowing in the forepart of the tongue, in accordance with the English organic basis (§ 8), it has a hollower sound; 2) it has a dorsal articulation, and the back-part of the tongue is raised, whilst the German *l* is coronal and the bulk of the tongue remains as far as possible passive.

44. V. The **nasal consonants** have a complete occlusion in the mouth, but at the same time the velum with the uvula is lowered quite as it is in ordinary breathing without speaking. The month accordingly forms a caecal sack (cul-de-sac) and serves only as a resonance-chamber for the breath, which has to escape through the nose. The difference of the nasal sounds is due to the different shapes of this resonance-chamber, which are produced by the different manners of occluding the mouth. The oral occlusions for the nasal sounds are made in the same ways and at the same places as for the corresponding oral occlusive sounds.

45. Accordingly, for the **mediopalatal nasals** *ɲ* and *ɳ* the oral occlusion is formed by the front part of the soft palate and the back part of the body of the tongue.

Note. In writing we use for this sound a common *n* only, if a *k* sound follows: sinke *zi²nək¹*, sank *za²nək¹*, inquirieren *ʔi²nəkʰi¹ri¹rɳ*, Konkurs *kʰò²nəkʰú²rʃ*; and an *n* also in foreign words and Old German names, if a *g* follows, as in Evangelium *ɛ²wa²nɡé¹li²u²m*, Ungarn *ú²nɡá²rn*, Ganges *Ǿ²nɡa²s*, Linguist *li²nɡwi²st*, fingieren *fi²nɡi¹rɳ*, Ingo *ʔi²nɡò¹*, Engadin *ɛ²nɡa²di¹n*; in words borrowed from Latin *g* before *n* is pronounced as *ɲ*, as in Magnet *ma²ɲné¹t*, Signal *zi²ɲná¹l*, Ignorant *ʔi²ɲnò¹rá²nt*. In all the other cases *ɲ* is expressed in writing by *ng*, e. g. singe *zi²ɲa¹*, sang *za²ɲ*, jung *ju²ɲ*, jüngst *jü²ɲst*, Finger *fi²ɲr* (not like the Engl. finger *fi²nɡə²*); so too in *Diphthonge *di²ftʰó²ɲa¹*.

46. With the **alveolar nasals** *n* and *ɲ* the occlusion is formed by the front edge of the tongue and the alveoli of the upper teeth.

Alveolar
nasals;
Fig. XI.

47. With the **labiodental nasal** *ɱ*² the upper teeth and the underlip form the oral occlusion; cf. § 24. Nym^{ph}e, *nũ²ɱ²fə¹*; cf. Engl. nymph also with *m*².

Labiodental
nasal;
Fig. XIV.

48. With the **labiolabial nasals** *m* and *ɱ*¹ both lips form the occlusion; cf. § 25.

Bilabial
nasals;
Fig. XV.

49. If the vocal chords touch each other and vibrate, a **voiced** sound is produced (§ 11, 4); if the glottis is open, a **voiceless** one (§ 11, 2). The voiced occlusive sounds are *g*, *d*, *b*; the voiceless *ç*, *k*, *t*, *p*², *p*¹. The voiced fricatives are *g*, *j*, *ž*, *z*, *w*; voiceless *h*, *h*², *h*¹, *š*, *s*, *f*, *ʃ*. The trills, the lateral and the nasal sounds (with exception of *ɱ*² which is always voiceless) can be both voiceless and voiced.

Voiced and
voiceless
consonants
in general;
Fig. VI 2, 4.

50. Voiced occlusive sounds become voiceless:

1) At the end of a word and at the end of the first part of a compound: Brigg *bri²k*, Flaggsschiff *fla²kš²i²f*; Magd *mā²h²t*, Jagdanzug *ja²h²t:ā²ntš²ũ²h²*, Abendrot *ā²b²nt²rō¹t*, Abendessen *ā²b²nt²ē²sn*; Lob *lo²p¹*, Schreibart *š²rā²ē²p¹:ā²rt*, leblos *lē¹p¹lō¹s*, abrupt *ā²p¹rū²p¹t*, *subaltern *zū²p¹:ā²ltē²rn* (but not in foreign words as e. g. *sublim *zu²blī¹m*, where the composition is not clearly understood).

Voiced and
voiceless
occlusive
sounds.

Note 1. If after *gg*, *d* or *b* the dropping of an *ə*¹ is indicated by an apostrophe, these sounds remain voiced Flagg' *fla²g*, ich red' *rē¹d*, Knab' *k²nā²b*. They remain also voiced at the end of the first parts of the following compounds: *Knoblauch *k²nō²blū²ō²h²*, *Obacht *ō¹bā²h²t*, *Hebamme *hē¹bā²mā¹*, *selbander *zē²lbā²nd²*, *Friedrich *f²rī¹dri²h¹*, *Ludwig *lū¹dwi²h¹*, *Hedwig *hē¹dwi²h¹*.

2) In the middle of words before suffixes beginning with consonants and before voiceless consonants which do not belong to a suffix, e. g. *flugs *fla²kš*, *Augsburg *ā²ō²kšbū²h¹*, flaggst *fla²kšt*, flaggt *fla²kt*, *bugsieren *bū¹kšī¹rn*; abends *ā²b²ntš*, tugendhaft *tū¹g²nt²hā²ft*, Mädchen *mē²t²h¹n*, Findling *fī¹nt²lī²n*, kindlich *k²hī²nt²lī²h¹*; Lobs *lo²pš*, lobt *lō¹p¹t*, lobst *lō¹p¹št*, löblich *lō¹p¹lī²h¹*,

Knäbchen *kne²p¹h¹n*, Abt *a²p¹t*, Labsal *la²p¹šà²l*, Liebling *li¹p¹li²n*.

Note 2. *d* and *b* remain voiced, if before *r*, *l*, *n*, *m*, belonging to the stem of the word an *a¹* is dropped: edler *é²dlr*, andrer *a²ndrr*, Redner *ré²dnr*, widmen *wi²dmn*; übles *ü¹blə¹s*, übrig *ü¹bri²h¹*, ebnes *é²bnə¹s*. In the same way before the ending -nung: Ordnung *o²rdnà²n*, Ebnung *é²bnà²n*. The use with the suffix -lein wavers: Kindlein *khi²ndlà²en* and *khi²ntl²en*, Knäblein *kne²b-là²en* and *kne²p¹là²en*. Before the suffixes -lich, -ling the voiceless sounds always appear; cf. § 82, 1. The voiced sound appears besides in some isolated words: *adlich (←adellich) *a¹dli²h¹*, *Gelübde *gə¹lū²βdə¹*, *Liebden *li¹bdn*. Lastly, *g* in Greek and Latin words before suffixes beginning with *m* is voiced: Dogma *dó²gmà²*, Fragment *frà²gmə²nt*.

51. Voiced fricative sounds become voiceless:

1) At the end of a word or at the end of the first part of a compound: bog *bō¹h²*, Zug *tsu²h²*, Zugführer *tsú²h²fű¹rr*, Zugochse *tsú²h²o²ksə¹*, Weg *wē¹h¹*. Zeug *tsə²ü²h¹*, Zeughaus *tsə²ü²h¹h²o²s*, Zengart *tsə²ü²h¹à²rt*, Burg *bu²rh¹*, Burgaufgang *bú²rh¹b²o²fgà²n*, Haus *hə²o²s*, Hausvater *hə²o²sfà²tr*, Hausarzt *hə²o²sà²rtst*; activ *a²ktì¹f*, brav *brā²f*, Adjeetif *a²dje²ktì¹f*, Charkow *h²à²rkə²f*.

Note 1. If after *g*, *j*, *ž*, *z*, *w* the dropping of an *a¹* is marked by an apostrophe, the voiced sound remains: therefore Aug' *a²o²g*, leg' *lē¹j*, Reis' *rə²ə²z*, Courag' *kú¹ra²ž*, Löw' *lō¹w*.

2) Voiced fricatives become voiceless in the middle of a word before suffixes beginning with a consonant and before voiceless consonants which do not belong to suffixes: des Flugs *flū¹h²s*, fragte *frā²h²tə¹*, fraglich *frā²h²li²h¹*, tragbar *trā²h²bà²r*, Magd, Jagd, Smaragd *mā²h²t*, *ja²h²t*, *sm¹a²ra²h²t* (and here this pronunciation is transferred also to the plural Mägte, Jagden, Smaragde *mē²h¹tə¹*, *ja²h²tn*, *sm¹a²ra²h²tə¹*); biegt *bī¹h¹t*, lügt *lū¹h¹st*, Wegs *wē¹h¹s*, folgt *fō¹lh¹t*, birgt *bī²rh¹t*, Feigling *fə²ə²h¹lin*, Ereignis *a¹r²ə²h¹ni²s*, regsam *rē¹h¹sà²m*, Vögte *fō¹h¹tə¹*; löste *lō¹stə¹*, Röslein *rō¹slà²en*, Bosheit *bō¹shà²et*, Klaus-

ner *kʰlʊ²q²snr*, Knospe *kʰnɔ²sp¹ɔ¹*, Maske *má²skɔ¹*; Löwchen *lō²h¹ŋ*, Levkoje *le²fkɔ²jɔ¹*.

Note 2. The voiced fricatives remain, if before *r*, *l*, *n*, *m* belonging to the stem of the word an *ɔ¹* is dropped: magrer *má²gr*, kuglicht *kʰá¹gli²ht*; segnen *zɛ¹jny*, ängle *ɔ²ǣ²jɔ¹*, bettlägerig *bé²tlɛ²jri²h¹*; weisre *wá²ɛ²zrɔ¹*, gewesen *gə¹wɛ²zn*, bravre *brá²wrɔ¹*, naive *ná²i¹wrɔ¹*. (Before the suffixes -lich, -lein, and -ling and the endings -ner and -ler we have the voiceless fricatives: Wagner *wá²h²nr*, Lügner *lū¹h¹nr*, Klausner *kʰlʊ²q²snr*, Vogler *fʊ¹h²lr*.) *s* and *w* also retain their voice, if in the suffix -ig the *i* disappears: eis'ge *ɔ²ɛ²zjɔ¹*, ew'ge *ɛ¹wɛjɔ²*; for *j* and *g* in this case cf. § 29 note 1.

3) The letter *s* denotes the voiced alveolar fricative *z*:

a) at the beginning of a word before vowels, e. g. so *zō¹*, Salz *zə¹lts*; also in foreign words borrowed from Greek and Latin, e. g. Sonant *zō¹ná²nt*, Sophist *zō¹fi²st*; and in a few Romance words *Salat *zā¹lá²t*, ~~*Saison zé²zō²~~, *Salon *zā¹lɔ²*, *Service *ze²rwɛ¹s*, *Serviette *ze²rwɛ¹ɛ²tɔ¹*, *Solo *zō¹lō¹*, *Sauce *zō¹sɔ¹*, ~~*Soubrette zā¹brɛ²to~~, ~~*Souper zū¹p¹hɛ¹~~. In the other words borrowed from the Romance languages the voiceless *s* is retained, e. g. Sergeant *se²rzá²nt*, Souverän *sā¹wə¹rɛ²*, ~~Saison se²zō~~, ~~Soubrette sā¹brɛ²to~~, ~~Souper sū¹p¹hɛ¹~~.

b) in the middle of a word before vowels, if a vowel or *r*, *l*, *n*, *m* precedes, as e. g. lese *lé¹zə¹*, Perser *p¹hɛ²rzr*, Person *p¹ɛ²rzō²n*, Wesen *wɛ²zn*, Verse *fɛ²rzə¹*, Felsen *fɛ²lzɛ*, Universität *ü²ni²wɛ²rzi²tʰɛ²t*, heilsam *hɔ²ɛ²lzä²m*, Hansa *há²nzä²*, emsig *ɛ²mzi²h¹*, Version *wɛ²rzi²o¹n*, Konvulsion *kʰò²nwu²lzi²ó¹n*, Raison *rɛ²zɛ²ɔ²*.

Apart from the cases mentioned under 1 and 2, *s* expresses the voiceless sound: a) if a consonant, except *r*, *l*, *n*, *m*, precedes: Erbse *ɛ²rpsə¹*, Lotse *lɔ¹tsə¹*, wechseln *wɛ²ksln*, Absicht *á²p¹si²ht*, seltsam *zé²ltsä²m*, folgsam *fɔ²lh¹sā²m*, sittsam *zi²tsä²m*, Psalm *p¹sā²lm*, psychisch *p¹sū¹h¹i²s*; b) at the beginning of a foreign word before a consonant: Scene *sʰsɛ¹nə¹*, Sklave *sʰklá²wə¹*, Smaragd *sʰm¹á²rá²h²t*, Swine *sʰi¹nə¹*.

4) Apart from the cases mentioned under 1 and 2, the letter *v* indicates the voiceless labiodental fricative *f* in all the genuine German words: viel *fī¹l*, Frevel *frɛ¹fl*, Venn

fē²n, Vlāme *flē²mā¹*, Verden *fē¹rdn*, Vischer *fī²šr*, Voss *fō²s*, Hannover *hā²nō¹fj* (but also wīch *w*), (Wilhelms-) haven *hā²fj*; and in the following foreign words: *Vers *fē²rs*, *Veilchen *fā²ē²lh¹n*, *Vogt *fō¹h²t*, *Vettel *fē²tl*, *Larve *lā²rfā¹*, *Pulver *p¹hū²lfj* (mostly too so in *Nerven *nē²rfj*, but *nervös *nē²rwē¹s*).

On the other hand the voiced fricative *w* is represented by *v* in all the other borrowed words, e. g. vulgär *wu²lgē²r*, privat *p¹rī¹wā²t*, Sklave *sklā²wā¹*, Vocal *wō¹kḥā²l*, Salve *zā²lwā¹*; and in a few German names, as *Vandalen *wā²ndā²ln*, *Sievers *zī¹wj*, *Trave *trā²wā¹*, *Kleve *kḥē¹wā¹*.

5) The bilabial fricative *b* does not occur as a voiced sound in German, but is always voiceless, as it is found only after voiceless consonants, cf. § 25 note 1.

52. The trills, lateral and nasal sounds (with exception of *m*²) are voiced, but:

1) if at the beginning of a syllable they are preceded by one or several voiceless consonants, they become voiceless, or at least half voiceless, so that the sound begins as a voiceless one, and ends as a voiced: tragen *trā²gn*, Schreck *šrē²k*, schmettre *šm¹ē²trā¹*; klang *kḥlā²n*, Sklave *sklā²wā¹*, schlau *šlw²q²*, lächle *lē²hlā¹*; Knecht *kne²h¹t*, schnitt *šnī²t*, gebackne *gā¹bā²kne¹*; Schmied *šm¹i²t*, Smaragd *sm¹a²rā²h²t*, Tmesis *tm¹ē¹zi²s*, atme *ā²tm¹*. Cf. Engl. pride, slow with bride, glow;

2) if at the end of a syllable they are followed by one or several voiceless consonants (except *h*), they become voiceless, or at least half voiceless, so that the sound begins as a voiced one and ends as voiceless: Orte *ō²rtā¹*, wird *wi²rt*, warfen *wā²rfj*, wirft *wi²rfj*, Herzen *hē²rtj*; kalte *kḥā²ltā¹*. halb *hā²lp¹*, Schultz *šul²tj*; trank *trā²k*, trinkst *trī²rkst*; bunte *bū²ntā¹*, Land *lā²nt*, ganz *gā²ntj*, Menschen *mē²nšj*; dampfen *dā²m²p²fj*, fünf *fū²m²f*, sanfte *zā²m²ftā¹*; Amt *ā²m¹t*, fremd *fre²m¹t*, Lumpen *lū²m¹p¹n*. Cf. Engl. sent, felt, lamp with send, field, lamb.

Before *h* the voiced quality is retained: mannhaft *mā²nḥā²ft*, wahrhaft *wā²rḥā²ft*.

Fortes and
lenes; double
consonants.

53. Sounds, which are pronounced with comparatively less force of expiration, i. e. with lower

voice, are called **lenes**; sounds pronounced with comparatively greater force of expiration, i. e. louder, are called **fortes**. In German all the voiced consonants are lenes, on the other hand the voiceless occlusive and fricative sounds (with the exception only of the bilabial voiceless *b*) are fortes; for the breath of expiration can of course produce a more energetic effect with the glottis open than with the glottis closed, where a part of the force is used to make the vocal chords vibrate. Only the bilabial *b*, the trills, lateral and nasal sounds, which are originally voiced, but lose their voice under the conditions mentioned above (§ 51, 5. 52), keep their original quality as lenes, although they have become voiceless.

The ratio of force between lenis and fortis is only a relative one: e. g. if a voiced consonant occasionally, for instance, when the speaker is excited, is pronounced with a greater expiration than usually, a voiceless consonant of the same syllable will be produced with a still greater force of expiration; accordingly with equal force of speaking the gradation between lenis and fortis is always maintained.

This can especially be observed with words, such as *Flagge* *flá²gə¹*, *Roggen* *ró²gŋ*, *back(e)* *bá²k(ə¹)*, *Rocken* *ró²kŋ*; *Widder* *wi²dɾ*, *Padde* *p¹há²də¹*, *Ritter* *ri²tɾ*, *Ratte* *rá²tə¹*; *Krabbe* *kɾá²bə¹*, *Robbe* *ró²bə¹*, *Knappe* *kɳá²p¹ə¹*, *Rapp(e)* *rá²p¹(ə¹)*; *Schiffe* *ʃi²f(ə¹)*; *pass(e)* *p¹há²s(ə¹)*; *kom-m(e)* *kʰó²m(ə¹)*, *Mann(e)* *má²n(ə¹)*; *all(e)* *á²lə¹*; *irr(e)* *i²rə¹*. The double consonants in modern German do not express at all a reiterated articulation of the same sound or the length of the sound, but only the force of expiration. E. g. *dd* in *Padde* *p¹há²də¹* and *tt* in *Ratte* *rá²tə¹*, which represent only the single sounds *d* and *t*, are produced with greater force of expiration than *d* in *Rade* *rá²də¹* and *t* in *rate* *rá²tə¹*; i. e. *dd* has the function of a fortis in comparison with the lenis *d*, and *tt* is a still stronger fortis in comparison with the fortis *t*. In the same way *ff* in *Schiffe* *ʃi²f(ə¹)* or *schafft* (procures) *ʃá²ft* is a stronger fortis than the usual fortis *f* in *schiefe* *ʃi¹fə¹* or *Schaft* (handle) *ʃá²ft*. In *Manne* *má²nə¹* *nn* is fortis, but in *mahne* *má²nə¹* the single *n* is lenis; *ll* is fortis e. g. in *schallt* *ʃá²lt* (it sounds), but *l* is lenis in *schalt* *ʃá²lt* (scolded).

Note. In South German dialects the gradation of expiration has a much greater importance than in North

Germany; for, whilst here *b*, *g*, *z*, etc. are distinguished from *p*, *k*, *s*, etc. both by the voice and the weaker expiration, South Germany, which possesses only voiceless occlusive and fricative sounds, distinguishes the corresponding sounds only by a gradation of expiration: $p^1\partial^2e^2n$ with p^1 (or p^1h) fortis means pain, with p^1 lenis leg; $r\partial^2e^2sn$ with *s* fortis to tear, with *s* lenis to travel; $p^1\partial^1k\partial^2e^2tn$ with *k* fortis and *t* lenis is to dress, with *k* lenis and *t* fortis to accompany.

54. Although the German consonants have not all the same quantity and individually have not the same quantity in all positions, we can practically neglect the differences and can generally qualify all the German consonants, both lenes and fortes, as short — in contradistinction to the English consonants (cf. especially the *n* in English *man* $mæ^2\bar{n}$ and German *man* $ma^2\bar{n}$). Unquestionably long consonants occur only in compounds, if the first part ends and the second part begins with the same consonant; e.g. *Nottaufe* $n\partial^1t\bar{t}h\partial^2\partial^2f\partial^1$, but *Notausgang* $n\partial^1t\bar{t}h\partial^2\partial^2sga^2\partial$, *Packkorb* $p^1h\partial^2k\bar{t}h\partial^2\partial^2r\bar{p}^1$ but *Packort* $p^1h\partial^2k\bar{t}h\partial^2\partial^2r\bar{t}$, *Halbpreusze* $h\partial^2l\bar{p}^1r\partial^2\partial^2s\partial^1$ but *Halbrensze* $h\partial^2l\bar{p}^1r\partial^2\partial^2s\partial^1$, *Tauffeier* $t\bar{h}\partial^2\partial^2f\partial^2e^2\partial^1r$ but *Baufeier* $b\partial^2\partial^2f\partial^2e^2\partial^1r$, *Schnellläufer* $s\bar{n}\partial^2l\partial^2\partial^2f\bar{r}$ but *Schneeläufer* $s\bar{n}\partial^2l\partial^2\partial^2f\bar{r}$. So also if two words are contracted under one principal stress, e.g. *Not tun* $n\partial^1t\bar{t}h\bar{u}^1n$ but *so tun* $z\partial^1t\bar{t}h\bar{u}^1n$, *Lärm machen* $l\bar{e}^2r\bar{m}\partial^2h^2\bar{u}$ but *leer machen* $l\bar{e}^1r\bar{m}\partial^2h^2\bar{u}$. An occlusive sound is lengthened by lengthening the soundless pause between the making and the opening of the occlusion; all the other sounds are lengthened by continuing the expiration, whilst the organs of speech remain in the position required for the respective consonant. But in no case is the lengthening of a consonant produced by performing the same articulation twice, in *Nottaufe* for instance is only one *t*, not two.

Note 1. Besides this purely phonetical lengthening consonants are sometimes lengthened for metrical or rhetorical reasons (e. g. *ich frage nicht, wann* [$wa^2\bar{n}$] *er es getan hat, sondern was* [$wa^2\bar{s}$] *er getan hat; Vater!* in a very emphatic exclamation sounds $\bar{f}\partial^2t\bar{r}$); individually, consonants are lengthened by persons who drawl their words.

Note 2. We can sometimes observe the tendency to shorten a long consonant, especially in words frequently used, e. g. *Mittag* $m\bar{i}^2t\bar{h}\partial^2h^2$ instead of $m\bar{i}^2t\bar{h}\partial^2h^2$, *dasselbe* $d\bar{a}^2s\bar{e}^2l\bar{b}\partial^1$ instead of $d\bar{a}^2s\bar{e}^2l\bar{b}\partial^1$, *Wollust* $w\partial^2l\bar{u}^2s\bar{t}$ instead of

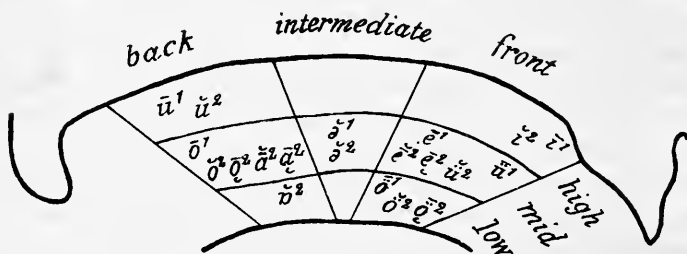
wó²lū²st. Very common is the shortening of a long consonant, if it is preceded or followed by another consonant: *aechtzig* *ʔá²h²t̥s̥i²h¹* instead of *ʔá²h²t̥s̥i²h¹*, *hast du* *há²st̥ú¹* instead of *há²st̥ú¹*, *Bankkasse* *bá²ʔk̥há²s̥á¹* instead of *bá²ʔk̥há²s̥á¹*, *Halbprisma* *há²lp̥r̥i²s̥m̥á²* instead of *há²lp̥r̥i²s̥m̥á²*, *Exzellenz* *ʔé²k̥s̥á¹lé²nt̥s̥* instead of *ʔé²k̥s̥á¹lé²nt̥s̥*; *Selbstsucht* *zé²lp̥st̥s̥ú²h²t̥* is very often pronounced quite like *Selbstsucht* *zé²lp̥st̥s̥ú²h²t̥* (by assimilation arisen out of *zé²lp̥st̥s̥ú²h²t̥*).

55. Certain consonants can assume the function of vowels; if namely a syllable contains *r*, *l*, *n*, *m*, and no other sounds which are more sonorous than one of these Consonants
used as vowels. four, *r*, *l*, *n*, *m* become the **sonants** or vowels of the syllable (**silbepbildend, silbisch, Sonanten**), and this function is indicated by a little circle under them; cf. *Haydn* *há²é²d̥y*, *Ischl* *ʔé²š̥l̥*. They are all sonorous sounds, qualified by a pure musical tone without any noise. In the German unaccentuated syllables *er*, *el*, *en*, *em* the *ə¹* is usually not pronounced and the following consonant becomes thereby a sonant or vowel: *Bruder* *brä²d̥r̥*, *Vater* *fä²t̥r̥*, *Lager* *lá²gr̥*, *steinern* *št̥é²en̥r̥n̥*; *Handel* *há²nd̥l̥*, *eitel* *ʔé²é²t̥l̥*, *Kugel* *k̥h̥ú²gl̥*, *lächeln* *lé²h̥l̥n̥*; *Händen* *hé²nd̥n̥*, *wachend* *wá²h̥nt̥*; *stille* *št̥i²lm̥*, *Atem* *ʔá²t̥m̥* (cf. Engl. *idle*, *hidden*, *better* and *better*, *rhythm*). So also in unstressed syllables, other than final: *Büchelehen* *bü²h̥l̥h̥l̥n̥*, *schneidenden* *šn̥é²é²d̥ydn̥*, *geschnittenen* *gə¹š̥ní²t̥nn̥*, usually *gə¹š̥ní²t̥nn̥*. But the prefixes *ver-*, *er-*, *zer-*, *ent-*, *em-* are seldom pronounced as *f̥r̥*, *r̥*, *t̥sr̥*, *nt̥*, *m̥²*, mostly as *f̥á¹r̥*, *ʔá¹r̥*, *t̥s̥á¹r̥*, *ʔá¹nt̥*, *ʔá¹m̥²*, e. g. *vergangen*, *f̥á¹rgá²nn̥*, *entgangen* *ʔá¹nt̥gá²nn̥*, *empfangen* *ʔá²m̥²p̥fá²nn̥*. In the same way, *en*, *em*, *er*, *el*, preceded by a vowel or *i²*, are pronounced as *ə¹n̥*, *ə¹m̥*, *ə¹r̥*, *ə¹l̥*, not as *u*, *u̥*, *r̥*, *l̥*; e. g. *säen* *zé²ə¹n̥*, *sähen* *zé²ə¹n̥*, *Feuer* *f̥ó²ü²ə¹r̥*, *hoher* *h̥ó¹ə¹r̥*, *hohem* *h̥ó¹ə¹m̥*, *Büchel* *bü²ə¹l̥*, *Italien* *ʔt̥h̥á²l̥i²ə¹n̥*, *Spanier* *š̥pá²n̥i²ə¹r̥*.

Note. Occasionally a voiceless consonant can also undertake the function of a sonant; this is sometimes the case with *es*, which in familiar speech is often pronounced as *š̥*, instead of the more careful *ʔá¹s̥*, e. g. *ist's* *ʔi²š̥ts̥*, *es* (*š̥*) *kam ein Hund gelaufen*, *es* (*š̥*) *hat geregnet*. Compare in Engl. Jones's *džó²u²nn̥š̥š̥*. Sonantal *š̥* and *š̥* occur also in the interjections *št̥*, *š̥t̥*, *p̥¹št̥*, *h̥š̥*.

IV. Vocalism.

56. Table of the 18 genuine German and the 4 French Vowels together with the list of the phonetical symbols and the key-words for the different spellings; for the explanations see §§ 57—69.



Combined vowels or diphthongs: $\partial^2\partial^2$, $v^2\partial^2$, $o^2\ddot{u}^2$, $u^2\ddot{u}^2$.

1) \bar{u}^1 high back tense round long: **Mut**; **Huhn**; ***Kotzebue**; **Tour** (only French words); **Boer** (only Dutch words).

2) u^2 high back lax round short: **Mutter**; **Ressource** (only French words). It forms the first component in $u^2\ddot{u}^2$: **Luitpold**; **Louis** (only French words); cf. § 68.

3) \bar{o}^1 mid back tense round long: **Ofen**; **Hohn**; **Boot**; **Lützow** (cf. § 38 note); **Soest**, **Voigtland** (only Low German words); **Sauce** $z\bar{o}^1\partial^1$, **Plateau** (only French words); **Toast** (only English words).

4) o^2 mid back lax round short: **offen**. In $o^2\ddot{u}^2$ it forms the first component: **heute**; **Häute**; **Zuidersee** (only Dutch words); **Loisach**; **Savoyen** (only in foreign words); cf. § 68.

∂^2 The same sound as consonant in the diphthong $v^2\partial^2$ (cfr. n^o 9).

5) \bar{o}^2 mid back lax round long nasalized: **Ballon** $ba^2l\bar{o}^2$, **L'hombre** $l\bar{o}^2b\bar{o}$ (only French words).

6) \bar{a}^2 mid back lax long: **Tal**; **Saal**; **Stahl**; ***Maestricht** (only Dutch words); ***Shawl** (only English words); **Toilette** $th\bar{o}^2\bar{a}^2l\bar{e}^2t\bar{o}^1$ (only French words).

7) \bar{a}^2 mid back lax short: **Stall**.

8) \bar{a}^2 mid back lax long nasalized: **Chance** $\check{s}\bar{a}^1\check{s}\bar{a}^1$. **Pension** $p^1\bar{a}^2z\bar{i}\bar{o}^1n$, **Chambre** $\check{s}\bar{a}^2b\bar{o}$, **Temps** $th\bar{a}^2$ (only French words).

9) v^2 low back lax short, forms only the first element of the diphthong v^2o^2 : **Haus**.

10) \bar{o}^1 mid intermediate tense short: **Knabe**.

11) \bar{o}^2 mid intermediate lax short, forms only the first component of the diphthong \bar{o}^2e^2 : **Weise**; **Waise**; **Meyer**; **Mayer**; **Yssel** (only Dutch words); cf. § 68.

12) \bar{i}^1 high front tense long: **Stil**; **Stiel**; **stiehl**; **ihn**; **Schwyz** $\check{s}\bar{b}\bar{i}^1\check{s}$, **Tyrol** $t\bar{i}^1r\bar{o}^1l$ (also in foreign words: **Radetzky**, **Jury**); **Spleen** (only English words).

13) \bar{i}^2 high front lax short: **still**; ***Viertel** $f\bar{i}^2r\bar{t}l$.

\bar{i}^2 The same sound with the function of a consonant: **Familie** $f\bar{a}^2m\bar{i}^1l\bar{i}^2$; cf. § 68.

14) \bar{e}^1 mid front tense long: **gebe**; **stehle**; **See**; **Bankier** $b\bar{a}^2\bar{e}^1k\bar{i}^2$, **Soiré** $s\bar{o}^2\bar{a}^2r\bar{e}^1$ (only in French words).

15) \bar{e}^2 mid front lax long: **gäbe**; **stähle**; **Affaire** $a^2f\bar{e}^2r\bar{a}^1$, **Dessert** $d\bar{e}^2\check{s}\bar{e}^2r$, **Essay** $e^2\check{s}\bar{e}^2$ (only in French words).

16) e^2 mid front lax short: **Stelle**, **Ställe**.

e^2 the same sound as consonant in the diphthong \bar{o}^2e^2 (cf. n^o 11).

17) \bar{e}^2 mid front lax long nasalized: **Bassin** $ba^2s\bar{e}^2$, **Refrain** $r\bar{e}^2f\bar{r}\bar{e}^2$, **bien** $b\bar{i}\bar{e}^2$, **Teint** $th\bar{e}^2$ (only in French words).

18) \bar{u}^1 mid front tense round long: **Gemüter**; **Hühner**; ***Duisburg** (only Low German words); **Mythe** (only Greek words); **Brunette**, **Revue** (only French words).

19) \bar{u}^2 mid front lax round short: **Mütter**; **System** (only Greek words); **Lustre** (only French words).

\bar{u}^2 the same sound as consonant, forming the second component of the diphthongs $u^2\bar{u}^2$ (cf. n^o 2) and $o^2\bar{u}^2$ (cf. n^o 4).

20) \bar{o}^1 low front tense round long: **Öfen**; **höhnisch**; **Goethe**; **Epopöe** (only Greek words); **Redacteur**, **Coeur** (only French words).

21) \ddot{o}^2 low front lax round short: öffnen.

22) $\ddot{ö}^2$ low front lax round long nasalized: Parfum $p^1a^2rf\ddot{ö}^2$, Verdun $we^2rd\ddot{ö}^2$ (only French words).

57. If we examine the formation of the vowels, we must not start from the acoustic effect, the musical tone or note, but we have to examine them, like the consonants, from a physiological point of view, i. e. we have to start from the position of the organs of speech; cf. § 16. For, although in the formation of vowels the cavity of the mouth is open in its whole length, from the pharynx to the lips, and accordingly no interception of the breath (either by complete occlusion or by forming a narrow passage) takes place, and the channel of the mouth serves only as a resonance-chamber for the voice (or the voiceless breath, cf. § 58 note) produced by the vocal chords, we have nevertheless here too to speak of places of articulation (but not of places or modes of interception), as this resonance-chamber presents different shapes on account of the different positions of the tongue and the lips.

If we wish to classify the vowels from a physiological point of view, the following 4 factors are simultaneously to be taken into account:

1) the position of the vocal chords (voiced and voiceless vowels; cf. §§ 11, 2, 4. 58); 2) the position of the velum and the uvula (oral and nasalized vowels cf. §§ 13. 59); 3) the formation of the tongue; cf. §§ 14. 60—63; 4) the formation of the lips; cf. §§ 15. 67.

The first and second factors are identical for consonants and vowels; but the formations of the tongue and of the lips are, with few exceptions, characteristic of the vowels alone. The articulation of the tongue forms the constituent element of a vowel, the articulation of the lips is only modifying.

58. Vowels are pronounced, as their name indicates, with sounding vocal chords; and that they are the most sonorous of all sounds is due to the fact that the unchecked voice is considerably strengthened by the open resonance-chamber, the mouth.

Note. But we can produce any vowel with an open (§ 11, 2) [or half-open; § 11, 6] glottis, consequently as a voiceless [or half-voiced, whispered voiced] one. The acoustic effect is

that of an *h*, which, according to the position of the tongue and the lips required for the respective vowel, is to be determined as *h^a*, *hⁱ*, *h^u* etc., i. e. *h* pronounced from the *a* basis, from the *i* basis etc.; or, as we mark a consonantal vowel by a semicircle and voicelessness by a dot, as *ḡ*, *ḥ*, *ḡ* etc.

These voiceless vowels appear very scantily in German, but they must be assumed by those who do not admit that the German *h* has the character of a consonant (cf. § 34). A voiceless *ḡ* can appear in the interjection *aha* = phonetically *ḥḥḡḡḥḥ*: i. e. throughout the whole word the unchanged position of tongue and lips is retained, but at the beginning of the word and at the end the vocal chords are closed, in the middle opened; likewise in *Sahara* *ḥḥḡḡḥḥḡḡḥḥ*; a voiceless *ḡ* in *oho* *ḥḥḡḡḥḥ*, *Alkohol* *ḥḥḡḡḥḥḡḡḥḥ*; a voiceless *ḡ* or *ḡ* in *Johannes* *ḥḥḡḡḥḥḡḡḥḥ* or *ḥḥḡḡḥḥḡḡḥḥ*, *Ahorn* *ḥḥḡḡḥḥḡḡḥḥ* or *ḥḥḡḡḥḥḡḡḥḥ*; a voiceless *ḡ* in *Uhu* (eagle-owl) *ḥḥḡḡḥḥ*, *Schuhu* *ḥḥḡḡḥḥ*. These are cases where the German *h* could be = *ḡ*, *ḡ*, *ḡ*, namely when *h* stands between two vowels which have the same articulation of the tongue at least. But as a rule the German *h* is not produced from a position of the mouth-organs required for a certain vowel, but from the organic basis (§ 8) and from the third position of the glottis (§ 11, 3).

59. The German vowels are all oral; accordingly the nasal cavity is shut by raising the velum and uvula. Nasalized vowels indicated by a hook under them, in Oral and nasal vowels. which by lowering the velum both the nasal cavity and the mouth are open to the voice, occur only in words, which in comparatively modern times have been borrowed from French (Fig. XVIII): *Entree* *ḥḥḡḡḥḥ*, *Ballon* *baḥḥḡḡ*, *Parfum* *pḥḥḡḡḥḥ*, *Pince-nez* *pḥḥḡḡḥḥ*, *Train* *ḥḥḡḡḥḥ*. It is best to retain the French sounds in these and similar words; whilst French words, borrowed in older times, are pronounced after German fashion with the pure vowel + the alveolar nasal: *Charlatan* *ḥḥḡḡḥḥḡḡḥḥ*, *Finanz* *fḥḥḡḡḥḥ*, *Harlekin* *ḥḥḡḡḥḥḡḡḥḥ*, *Baron* *baḥḥḡḡḥḥ*, *Postillion* *pḥḥḡḡḥḥḡḡḥḥ*, *Bastion* *baḥḥḡḡḥḥ*, *Bataillon* *baḥḥḡḡḥḥḡḡḥḥ*.

60. As to the articulations of the tongue (cf. § 14) which for the vowels are always dorsal, certain parts of the tongue (**horizontal positions**) can Articulations of the tongue in general. approach in different degrees (**vertical positions**) the pa-

late; and the surface of these articulating parts of the tongue can assume different shapes (**tense** — **lax**).

61. I. We have to distinguish between three **horizontal positions** of the tongue, which can be approximately determined by the distance between the edge of the Horizontal articulations of the tongue. upper teeth and the highest point of the articulating part of the tongue (see the table § 56 and Fig. XVI—XXII):

1) the tongue is retracted, and the back part of it is moved towards the soft palate (**back vowels**);

2) the tongue has an intermediate position, and the middle part of it is opposite the boundary region of the hard and the soft palates (**intermediate or mixed vowels**);

3) the tongue is pushed forwards, and the front part of it is moved towards the hard palate (**front vowels**);

Note 1. The expression “horizontal” is to be understood loosely, not literally, for the channel of the mouth is no cavity with a completely horizontal position, but represents a slightly bent tube.

Note 2. The expression “mixed”, which is better avoided, is due to the false conception, that in forming vowels of this group the front and the back parts of the tongue participate simultaneously.

62. II. In the **vertical positions** of the tongue the distance between the highest point of the articulating part of the tongue and the nearest opposite part of the Vertical articulations of the tongue. palate can be measured, and, according to the greater or less degree to which the tongue is lowered, we divide the vowels into 1) **high**, 2) **mid**, and 3) **low vowels**; cf. the table § 56 and Fig. XVI—XXII.

Note 1. The expression “vertical” is not to be taken in the strict sense of the word. If we quite roughly represent the three different degrees by a sector of 4 concentric circles; we might say that the tongue descends in a centripetal direction: accordingly, with the back vowels from above-back towards below-front; with the front vowels from above-front towards below-back; only with the intermediate vowels can we speak with any strictness of a vertical descent.

Note 2. Standard English does not use the low back

lax v^2 which occurs in Cockney English father instead of the mid back lax a^2 in Engl. father. In German v^2 appears only as the first component of the diphthong v^2q^2 , as in Haus, but it is an independent vowel in some dialects, e. g. Bavarian-Austrian Vater $f\bar{v}^2tj$.

63. III. The articulating part of the tongue can either

1) show a greater convexity which can be noticed in the muscles by a feeling of tenseness, and which, of course, diminishes the distance between the articulating part of the tongue and the palate. Such vowels, denoted by the exponent 1, are called **closed, narrow or tense** (*geschlossene, enge, gespannte*). They are: $\bar{u}^1, \bar{o}^1, \bar{\epsilon}^1, \bar{i}^1, \bar{e}^1, \bar{u}^1, \bar{o}^1$.

Or 2) the articulating part of the tongue can be more flattened: the muscles are in a state of relative relaxation, and the distance between the palate and the articulating part of the tongue is, of course, greater. The vowels of this group, denoted by the exponent 2, are termed **open, wide or lax** (*offene, weite, ungespannte*). They are: $\bar{u}^2, \bar{o}^2, \bar{q}^2, \bar{a}^2, \bar{a}^2, \bar{q}^2, \bar{v}^2; \bar{\epsilon}^2, \bar{i}^2, \bar{e}^2, \bar{e}^2, \bar{e}^2, \bar{u}^2, \bar{o}^2, \bar{q}^2$.

Note 1. The difference is best expressed by the terms "tense" and "lax"; for the expression "closed", "narrow" and "open", "wide" are open to objections, as they only refer to the distance between the tongue and the palate, and a vowel with a greater distance from the palate, e. g. e^1 , would be called "narrow" or "closed", whilst a vowel with a less distance, e. g. i^2 , is "wide" or "open".

Note 2. In consequence of the flattened state of the tongue with the English organic basis (cf. § 8) the corresponding English tense vowels are missing: $\bar{\epsilon}^1, \bar{u}^1$, and \bar{o}^1 absolutely, $\bar{u}^1, \bar{o}^1, \bar{i}^1, \bar{e}^1$ only in the standard English (South Engl.): North English and especially Scottish have maintained these 4 old vowels: too $t\bar{h}\bar{u}^1$, so $\bar{s}\bar{o}^1$, sea $\bar{s}\bar{e}^1$, say $\bar{s}\bar{e}^1$; (compare the Germ. tu $t\bar{h}\bar{u}^1$, so $\bar{z}\bar{o}^1$, sieh $\bar{z}\bar{i}^1$, See $\bar{z}\bar{e}^1$.) South English has substituted for them diphthongs, consisting of lax vowels: $t\bar{h}u^2u^2, \bar{s}o^2u^2, \bar{s}i^2i^2, \bar{s}e^2i^2$.

64. With the exception of \bar{o}^1 which is always short, and of a^2 and e^2 which are short or long, in the **German (i. e. oral) vowels** with the difference between tense and lax is also connected a difference

Relations between tense-lax and long-short vowels.

of quantity, so that the **tense vowels** are **always long**, and the **lax vowels** **always short**. It therefore seems to be most convenient to discuss the appearance of the individual tense and lax vowels in connection with their quantity in §§ 69—74. Here it is, however, necessary to demarcate the provinces of the different *e* sounds: \bar{e}^1 , \bar{e}^2 ; $\bar{\alpha}^1$, $\bar{\alpha}^2$, \bar{e}^2 .

The **French (i. e. nasal) vowels**, appearing in borrowed words, are pronounced in German **always long and lax**, so that we have in this case also a long $\bar{\alpha}^2$ and $\bar{\alpha}^2$, whilst the same sounds without nasalisation are transmuted into \bar{o}^1 and \bar{o}^1 in French words, adopted by N. H. G., e. g. Redacteur $r\bar{e}^1da^2k\bar{t}\bar{h}\bar{o}^1r$, Corps $k\bar{h}^1\bar{o}^1r$, in contradistinction to the pronunciation in French with \bar{o}^2 and \bar{o}^2 .

65. The **mid front tense long** \bar{e}^1 (Fig. XXI) is expressed in writing by *e*, *ee*, *eh*; in French words also by *é* and \bar{e}^1 and \bar{e}^2 . *er*: *gebe* $g\bar{e}^1ba^1$, *Erde* $\bar{e}^1rd\bar{a}^1$, *Schwert* $\bar{s}\bar{h}\bar{e}^1rt$, *Peter* $p^1\bar{h}\bar{e}^1t\bar{r}$, *Colleg* $k\bar{o}^2l\bar{e}^1h^1$, *Poet* $p^1\bar{o}^1\bar{e}^1t$, *Facsimile* $f\bar{a}^2k\bar{s}i^1mi^2l\bar{e}^1$, *Athene* $\bar{a}^2\bar{t}\bar{h}\bar{e}^1n\bar{e}^1$, *ade* $\bar{a}^2d\bar{e}^1$, *Ave* $\bar{a}^2w\bar{e}^1$, *Dresden* $dr\bar{e}^1st\bar{n}$; *Heer* $\bar{h}\bar{e}^1r$, *Idee* $\bar{i}^1d\bar{e}^1$, *Kaffee* $k\bar{h}\bar{a}^2f\bar{e}^1$; *stehle* $\bar{s}\bar{t}\bar{e}^1l\bar{a}^1$, *Ehre* $\bar{e}^1r\bar{a}^1$; *Café* $k\bar{a}^2f\bar{e}^1$; *Souper* $\bar{s}\bar{u}^1p^1\bar{h}\bar{e}^1$.

The **mid front lax long** \bar{e}^2 is written by *ä*, *äh*; *ae* (in words conveyed into German through Latin); *ai*, *ay* and *e* (in French words): *gäbe* $g\bar{e}^2ba^1$, *säen* $\bar{s}\bar{e}^2\bar{a}^1n$, *Städte* $\bar{s}\bar{t}\bar{e}^2t\bar{a}^1$, *Mädchen* $m\bar{e}^2\bar{t}\bar{h}^1\bar{n}$, *nächst* $n\bar{e}^2\bar{h}^1st$, *Diät* $d\bar{i}^1\bar{e}^2t$, *Dämon* $d\bar{e}^2m\bar{o}^1n$, *Kapitän* $k\bar{h}\bar{a}^2p^1i^2\bar{t}\bar{h}\bar{e}^2n$; *stähle* $\bar{s}\bar{t}\bar{e}^2l\bar{a}^1$, *Ähre* $\bar{e}^2r\bar{a}^1$; *Athenaeum* $\bar{a}^2\bar{t}\bar{h}\bar{e}^1n\bar{e}^2u^2m$; *Affaire* $\bar{a}^2f\bar{e}^2r\bar{a}^1$; *Essay* $\bar{e}^2\bar{s}\bar{e}^2$; *Dessert* $d\bar{e}^2\bar{s}\bar{e}^2r$.

$\bar{\alpha}^1$, $\bar{\alpha}^2$ and \bar{e}^2 . 66. The **mid intermediate lax short** $\bar{\alpha}^2$ (the same sound as in Engl. together) appears only as first component of the diphthong $\bar{\alpha}^2\bar{e}^2$: *Seite*, *Saite* $\bar{s}\bar{a}^2\bar{e}^2t\bar{a}^1$; cf. § 56, 11.

The **mid intermediate tense short** $\bar{\alpha}^1$ (Fig. XIX) is in German words to be found only in unstressed syllables, especially prefixes and endings (with exception of -er, -el, -en, -em, cf. § 55), e. g. *bestehn* $b\bar{a}^1\bar{s}\bar{t}\bar{e}^1n$, *verstehn* $f\bar{a}^1r\bar{s}\bar{t}\bar{e}^1n$, *entstehn* $\bar{e}^1nt\bar{s}\bar{t}\bar{e}^1n$, *empfangen* $\bar{e}^1m^2p^2f\bar{a}^2\bar{a}^1n$, *Gebet* $g\bar{a}^1b\bar{e}^1t$, *gebe* $g\bar{e}^1ba^1$, *gebet* $g\bar{e}^1ba^1t$, *Buches* $b\bar{u}^1\bar{h}^2\bar{a}^1s$, *schlechtste* $\bar{s}\bar{l}\bar{e}^2\bar{h}^1t\bar{a}^1st\bar{a}^1$, *Wüstenei* $w\bar{u}^1st\bar{a}^1n\bar{\alpha}^2\bar{e}^2$, *Missetat* $m\bar{i}^2\bar{s}\bar{a}^1\bar{t}\bar{h}\bar{a}^2t$, *lobesam* $l\bar{o}^1ba^1z\bar{a}^2m$. Under the same conditions this sound appears in foreign words, e. g. *Promenade*

$p^1r\delta^1m\delta^1n\acute{a}^2d\delta^1$, Infanterie $\imath^2\eta fa^2\eta t\delta^1r\acute{z}^1$, Route $r\acute{a}^1t\delta^1$, Bronze $br\acute{c}^2s\delta^1$. Exceptions are a few French words, as *Service ze^2rwi^1s , *Omelette $\imath\delta^1m\delta^1l\acute{e}^2t$, especially proper nouns in which the ending e is not pronounced, e. g. Racine, and Greek and Latin words which have \bar{e}^1 at the end, as Athene $\acute{a}^2t\hbar\acute{e}^1n\bar{e}^1$, promiscue $p^1r\delta^1m\acute{i}^2s\acute{k}u^2\bar{e}^1$.

Note. If er $\imath\bar{e}^1r$, es $\imath e^2s$, der $d\bar{e}^1r$, des de^2s , dem $d\bar{e}^1m$, den $d\bar{e}^1n$, and ein $\imath\delta^2\epsilon^2n$ become enclitic or proclitic, they mostly receive the sound δ^1 , e. g. es ($\imath\delta^1s$) war einmal ($\delta^1nm^1\acute{a}^2l$) ein (δ^1n) König.

In all the other cases appears the **mid front lax short** e^2 , which has in German words always a stress (principal or secondary accent) and is written by e and ä; e. g. Stelle and Ställe $\acute{s}t\acute{e}^2l\delta^1$, Ferse (heel) and Färse (heifer) $f\acute{e}^2rz\delta^1$, Vers $f\acute{e}^2rs$, Elend $\imath\acute{e}^1l\acute{e}^2\eta t$, faulenzzen $f\acute{b}^2\delta^2l\acute{e}^2\eta t\acute{s}n$, Herberge $\hbar\acute{e}^2rb\bar{e}^2rj\delta^1$, Hotel $\hbar\delta^1t\acute{e}^2l$, Chef $\acute{s}\acute{e}^2f$.

Unaccentuated e^2 occurs only in some foreign words borrowed from Romance languages, as Ressource $re^2s\acute{u}^2rs\delta^1$, Decret $de^2kr\acute{e}^1t$, and in foreign words, ending in es: e. g. Achilles $\imath\delta^2\hbar^2l^2le^2s$, Johannes $j\delta^1\hbar\acute{a}^2ne^2s$.

67. The most essential formations of which the lips are capable are already mentioned in § 15. Theoretically any articulation of the tongue could be combined with any articulation of the lips; this, however, is not in point of fact the case. In general we can say: the higher the position of the tongue, the more marked the articulation of the lips, i. e. the more intense the rounding or the narrower the slit.

Vowels which are pronounced with rounded lips are called **round, rounded or labialised** (gerundet, labialisiert).

The **i-slit** of the lips, combined with the **high front** position of the tongue, appears in \bar{i}^1 , i^2 .

„ **e-slit** of the lips, combined with the **mid front** position of the tongue, appears in \bar{e}^1 , \bar{e}^2 , e^2 , \bar{e}^2 .

„ **u-rounding** of the lips, combined with the **high back** position of the tongue, appears in \bar{u}^1 , u^2 .

„ **u-rounding** of the lips, combined with the **mid front** position of the tongue, appears in \bar{u}^1 , \bar{u}^2 .

„ **o-rounding** of the lips, combined with the **mid back** position of the tongue, appears in \bar{o}^1 , o^2 , \bar{o}^2 .

The **o-rounding** of the lips, combined with the **low front** position of the tongue, appears in \bar{o}^1 , \bar{o}^2 , \bar{o}^3 .

„ **passive opening** of the lips, combined with the **mid back** position of the tongue, appears in \bar{a}^2 , a^2 , \bar{a}^3 .

„ **passive opening** of the lips, combined with the **low back** position of the tongue, appears in v^2 .

„ **passive opening** of the lips, combined with the **mid intermediate** position of the tongue, appears in \bar{a}^1 , \bar{a}^2 .

Note. As to the articulation of the tongue, the rounded front vowels are practically identical with the corresponding unrounded front vowels: therefore mid front rounded \bar{a}^1 in *föhle* has the same position of the tongue as mid front \bar{e}^1 in *fehle*; mid front rounded \bar{u}^2 in *Fülle* the same as mid front e^2 in *Fälle*. We have no corresponding unrounded sounds for the low front rounded \bar{o}^1 and \bar{o}^2 in German; but they exist in English, which on the other hand, in consequence of its disinclination to activity of the lips (cf. § 8), does not any longer possess rounded front vowels. English \bar{a}^1 in *care*, pronounced with rounded lips, would result in German \bar{o}^1 , as in *Chöre* $\bar{h}\bar{o}^1r\bar{a}^1$; and English \bar{a}^2 in *man*, pronounced with rounded lips, would result in German \bar{o}^2 , as in *Mönch* $m\bar{o}^2\bar{n}h^1$.

68. Vowels with the function of a consonant, i. e. not forming a syllable, appear in N. H. G. only in diphthongs. By **a diphthong** we mean a monosyllabic combination of two single vowels which are pronounced with the same breath of expiration. In such a combination one vowel has the function of a **sonant**, the other the function of a **consonant**.

Diphthongs, like the real German ones, in which the sonant precedes and the consonant follows are called **falling**. There are 4 falling diphthongs in N. H. G.: $\bar{a}^2\bar{e}^2$ (as in *Eis*), $v^2\bar{a}^2$ (as in *Haus*), $\bar{o}^2\bar{u}^2$ (as in *heute*, **Loisach*, **Boi*), $u^2\bar{u}^2$ (as in **Luitpold*, **hui*, **pfui*); and in these \bar{e}^2 , \bar{a}^2 , \bar{u}^2 form, as indicated by the semicircle, the consonants.

Diphthongs in which the consonant precedes and the sonant follows are called **rising**. They appear in N. H. G. only in words borrowed from Romance languages, and the consonant is here invariably \bar{i}^2 (not j ; cf. § 36 note). E. g. *Familie* $\bar{f}\bar{a}m\bar{i}^1\bar{i}^2\bar{a}^1$, *Union* $\bar{u}^1n\bar{i}^2\bar{o}^1n$, *adieu* $\bar{a}^2\bar{d}\bar{i}^2\bar{o}^1$, *Ban-*

kier $b\grave{a}^2p\acute{k}\grave{i}^2\acute{e}^1$, Indien $i^2nd\grave{i}^2\acute{o}^1n$, Spanier $\acute{s}p^1\acute{a}^2n\grave{i}^2\acute{o}^1r$, Studium $\acute{s}t\grave{u}^2d\grave{i}^2u^2m$, Hygiene $h\ddot{u}^1g\grave{i}^2\acute{e}^1n\acute{o}^1$; i^2 especially appears after the affricata $t\acute{s}$, as in Nation $n\acute{a}^2t\acute{s}\grave{i}^2\acute{o}^1n$, Patient $p^1\acute{a}t\acute{s}\grave{i}^2\acute{e}^2n\acute{t}$, Latium $l\acute{a}^2t\acute{s}\grave{i}^2u^2m$, martialisch $m\acute{a}^2r\acute{t}\acute{s}\grave{i}^2\acute{a}^2l\grave{i}^2\acute{s}$, Akazie $\acute{a}^2\acute{k}h\acute{a}^2t\acute{s}\grave{i}^2\acute{o}^1$.

Note. That **ai** and **au** do not contain an a^2 can be proved by the fact, that they can not be heard at the same distance as a^2 , which as the most sonorous vowel is heard furthest. In general the consonants of the English falling diphthongs differ from the German ones by a somewhat higher position of the tongue; cf.:

Germ. $\acute{o}^2\acute{e}^2$ in **Eis** with Engl. $a^2\grave{i}^2$ in **ice**.

Germ. $v^2\acute{o}^2$ in **Haus** with American-Engl. $a^2\acute{u}^2$ in **house**.

Germ. $\acute{o}^2\ddot{u}^2$ in **Boi** with Engl. $\acute{o}^2\grave{i}^2$ in **boy**.

69. The **quantity** of a vowel depends on the duration of time which is required to produce the vowel; as the duration of time varies according to velocity of speech, the quantity of the vowels varies also, so that a vowel, usually short, becomes long in slow speaking, and a vowel, usually long, becomes over-long. The terms "short" and "long" have accordingly not an absolute value, but only a relative one, and the ratio of the duration of the individual sounds is not essentially disturbed by a change of velocity of speech.

The four degrees of quantity of vowels.

For practical purposes it will be sufficient to distinguish four degrees of quantity: 1) **short** (unmarked) Kam $k\grave{h}\acute{a}^2m$; 2) **half-long** (±) Berta $b\acute{e}^2r\acute{t}\acute{h}\acute{a}^2$; 3) (normal)-**long** (−) kamen $k\grave{h}\acute{a}^2m\grave{n}$; 4) **over-long** (=) kam $k\grave{h}\acute{a}^2m$.

70. **Short** vowels occur in the following cases: Short vowels

1) In **syllables with a weak or no stress** (prefixes, suffixes, or middle syllables), containing i^2 , e^2 , \acute{o}^1 ; or r , l , η , m . E. g. i^2 : **Nachtigall**, **Göttin**, **Wildnis**, **Logik**, **Grammatik**, **Rhetorik**, **Lyrik**, **Tragik**; \acute{e}^2 : **Dekret**, **Ressource**; \acute{o}^1 : **empor**, **schlechteste**, **Bösewicht**; r : **Bruder**; l : **Handel**, **handelte** $h\acute{a}^2nd\grave{l}t\acute{o}^1$; η : **liebenden** $li^1b\grave{y}d\eta$; m : **schlechtem**. So also u^2 and \acute{o}^2 in the foreign terminations **-us**, **-um**, **-os**, **-on**; e. g. **Circus**, **Metrum**, **Carlos**, **Logos**, **Kolon**, **London**.

2) a^2 **with a secondary stress** in the suffix **-sam**, as **heilsam**, and in ***Heimät** and ***Mónät**. a^2 is often short in **da**, **na**, **ja**, **ha**, when they express resentment.

3) The components of the diphthongs; cf. § 68.

4) Vowels are short before more than one spoken (not written) consonant; exceptions to this general rule are given in § 72, 3. E. g. Schlacht, Spatz, ward, Jagd, hart, barsch (rude), Mensch, fertig, Herz, Lord *loʔrt*, Wind, wird, irdisch, Brust, Furt, flugs *fluʔks*, Post, polnisch, rüsten, rüstig, gebürtig; also in compounds, e. g. Lorbeer, Walnusz, Singrün.

5) Before a fortis, expressed by a double consonant: e. g. Hütte *hüʔtə¹*, Ecke *ɛʔkə¹*, hoffe *hóʔfə¹*, all *ʔa¹l*.

6) Before a spoken (not written) single consonant: a) in different words, e. g. um, zum, zur, Luther *lüʔtr*, ob, von, Jot, hin, mit, in, an, weg; cf. § 72, 2. Also in foreign words, as Kapítel, Artikel, April, Chef, Billet *biʔliéʔt*, Rum, Gala, Metapher *meʔtáʔfɹ*, Grammatik *gra²-máʔtiʔk*, Kap, Klub *kluʔp¹*.

b) Before *ʃ* (written ss, sz) in Flusz, Flüsse, flosz, flösse, Gusz, gosz, Genosse, Genusz, genosz, Verdrusz, Kusz, küsse, Schüssel, Schlusz, Schlosz, Schlüssel, Schusz, schosz, Schosz (1. branch; 2. taxes), Trosz, Nusz, müssen, musz (but Mus *mū¹ʃ* pap), Rüssel, Ambosz, nasz, Fasz, Hasz, blasz, lassen, essen, fressen, messen, isz, frisz, misz and the derivatives of these words.

c) Before *ʃ* (written sch) in rasch, Asche, waschen (but wusch *wū¹ʃ*), Wäsche, Esche, dreschen, drosch, drösche, löschen, lisch, Böschung, Frosch, Busch, Büsche, Tisch, mischen, Dusche, Muschel and derived forms.

d) Before *h¹* and *h²* (written eh) in Geruch, Bruch (fraction), Wucher, Sichel, frech, Pech, nach, wach, Dach, lachen, Fach, Fächer, Bach, Rache, rächen, Koch, kochen, Köche, Küche, kroch, roch, kröche, röche, stechen, stich, gestochen (but stach *ʃtá²h²*), sprechen, sprich, gesprochen, Spruch (but sprach *ʃp¹ʔá²h²* and Sprache *ʃp¹ʔá²h²ə¹*) and derived forms.

e) Before *n* (written ng) always, e. g. sang, fíng, gefangen, gesungen, Finger *fí²nɹ*.

71. The (normal-) long and over-long vowels can be treated together, as any (normal-) long vowel in pausa, i. e. at

the end of a stress-group, becomes over-long: this takes place especially in a stressed monosyllabic word or in the stressed last syllable of a polysyllabic word. E. g. drei Márk | bóten ($bô^1t\eta$) sie or drei Márk | bót ($bô^1t$) er; but wás er | bót, ($bô^1t$) | wár drei | Márk or drei Márk, | die er | bót ($bô^1t$).

The same rule can also be applied to a diphthong which, although consisting of two short components, forms a unity and is equal to a long vowel, so that e. g. $v^2\varrho^2$ in der | blaue ($blv^2\varrho^2a^1$) | Himmel is (normal-) long, whilst $v^2\varrho^2$ in der | Himmel ist | blau ($blv^2\varrho^2$) has a longer duration and is over-long.

The German spelling does not mark the length in a uniform way. The length is 1) unmarked, as in waren (were), her (hither), Stil (style); 2) expressed by doubling the vowel, as in Waaren (wares), Heer (army); 3) expressed by an additional h, as in wahren (to defend), hehr (sublime); 4) expressed by the addition of an e, as in Stiel (handle), Soest ($zô^1st$); 5) expressed by eh, as in stiehl (imperativ of stehlen). In all these cases the pronunciation of the respective words is identical: $wâ^2r\eta$, $hê^1r$, $stî^1l$.

The spellings 2—5 are indubitable criteria of the length, with exception of a few cases with ie; cf. § 74.

72. The (normal-)long and over-long vowels are to be found 1) in syllables with the principal accent; 2) in syllables with the secondary accent only, if the principal one does not immediately precede or follow (in which case the half length appears; cf. § 73). E. g. wunderbar $wû^2nd\gamma b\grave{a}^2r$, wunderbare $wû^2nd\gamma b\grave{a}^2r\partial^1$ (but lesbar(e) $lê^1sb\grave{a}^2r(\partial^1)$); Heiligtum $h\acute{a}^2e^2li^2h^1t\grave{h}\grave{u}^1m$, Heiligtümer $h\acute{a}^2e^2li^2h^1t\grave{h}\grave{u}^1m\gamma$ (but Irrtum $i^2r\grave{t}\grave{h}\grave{u}^1m$, Irrtümer $i^2r\grave{t}\grave{h}\grave{u}^1m\gamma$); urgemütlich $û^1rgo^1m\grave{u}^1t\grave{li}^2h^1$ (but urplötzlich $û^1rp\grave{p}^1l\acute{o}^2t\grave{s}li^2h^1$); Corridor $k\grave{h}ó^2ri^2dô^1r$ (but Doctor $dó^2k\grave{t}\grave{h}ô^1r$).

The (normal-) long and over-long vowels appear in the following cases:

1) In words and syllables ending in a vowel, e. g. wo, zu, See, ahá, ade $a^2dê$, Logis $lô^1zî^1$, Revue $re^2w\grave{u}^1$, säen and sähen $zê^2\varrho^1n$, Seenen and sehen $zê^1\partial^1n$, höher $h\acute{o}^1\partial^1r$, Maria $má^2rí^1â^2$.

2) In words and syllables ending in a single spoken consonant, no matter how many are written; exceptions to this general rule are to be found in § 70, 6. E. g. *mir*, *wem*, *rot*, *Flug*, *Pflug*, *pflügen*, *bat(en)*, *Weg(e)*, *Tal(es)*, *Berlin be²rlī¹n*, *beredt bə¹rēt*, *wusch wū¹š*, *wünsche wū¹šə¹*, So also in foreign words, e. g. *nervös(e)*, *Natúren*, *Poet p¹ō¹ē¹t*, *Redacteur(e)*, *Kapitän(e)*, *Granít*, *Profit*, *Títel*, the words in *-ik* as *Musik*, *Mathematik*, *Lectüre*, *Mythe*, *Lyrik lū¹ri¹k*, *Spasz*, *Paket p¹ā²kḥē¹t*, *Peter p¹hē¹tr*, *Scene ššē¹na¹*, *Trompete*, *das Colleg ko²lē¹h¹* (the lecture), *der College ko²lē¹ja¹* (the colleague), the words in *-ion*, as *Union ū¹niō¹n*, *Nation nā²šīō¹n*.

The long vowels before *š* (written *sz*, *ss*) in the following German words deserve a special mention: *asz*, *äsz*, *frasz*, *fräsz*, *Gefräsz*, *sasz*, *säsz*, *masz*, *Masz*, *gemäsz*, *Strasze*, *Schosz* (lap), *blosz*, *stoszen*, *Stosz*, *grosz*, *Grösze*, *Fusz*, *Füsz*, *Busze*, *büsz*, *Musze*, *müszig*, *süsz* and derived forms (cf. § 70, 6, b); and the long vowels before *h¹* and *h²* (written *ch*) in the words: *Schmach*, *brach*, *bräche*, *stach*, *stäche*, *sprach*, *spräche*, *Sprache*, *Gespräch*, *hoch*, *Buche*, *Buch*, *Bücher*, *Tuch*, *Fluch*, *fluchen*, *suchen*, *Kuchen*, *Bruch* (fen) and derived forms (cf. § 70, 6, d).

3) Vowels followed by more than one consonant are nevertheless long in the following cases (cf. § 70, 4):

a) Before *rd*, *rt*, *rtš* (written *rz*), *rs*, *rš* (written *rsch*), *rh¹* (written *rch*) in *Herde*, *Beschwerde*, *Verden*, *Erde* (but *irdisch i²rdiš*), the forms of *werden* containing an *e* (but the vowels in *wird*, *wirst*, *ward*, *wurde*, *geworden* are short), *Gebärde*, *Behörde*, *Herd*, *Pferd*; *Schwert*, *wert*, *Art*, *zart*, *Bart*, *Geburt*; *Harz*; *erst*, *Börse*; *Barsch* (perch); *Märchen*; and derived forms.

b) Before *št* (and *zd*, written *sd*) in *Trost*, *trösten*, *Kloster*, *Ostern*, *Östreich*, *Ost(en)* (but also with *ō²*), *Wust*, *wüst*, *Wüste*, *Schuster*, *Husten*, *düster*, *Estland*; *Dresden* (mostly *drē¹štŋ*, seldom *drē¹zdu*); and derived forms.

c) Before *tš* and *tš²* (written *ts*, *z*, *tz*, *tsch*) in *stets*, *Lotse*, *Rätsel*, *Hospiz*, *Schwyz*, *Gratz*, *Königgrätz*, *hättscheln*.

d) In some isolated words, as *Papst*, *Probst*, *Vogt*,

Magd, Mädchen, Krebs, Obst *ro¹p¹st*, Mond *mo¹nt*, Montag, Adler, Wuchs, wuchs *wä¹ks*, wüchse, atmen, nächst *nē²h¹st*, höchst *hö¹h¹st*, nebst, Kebse, Obrigkeit, Obrist; Hedwig and Ludwig are pronounced with a long or short vowel. Most of these words have lost a vowel between the consonants, e. g. Magd ← O. H. G. magad, höchst ← O. H. G. hōhisto, a process still quite clear in such words as *ēdler*, *Gēgner*, *ūbrig*, *ātmen* and the verbal forms, as *lēbst*, *lēbt*, where the corresponding forms with the vowel between the consonants still exist, as *ēdel*, *gēgen*, *über*, *Ātem*, *lēbest*, *lēbet*, etc.

73. Long and over-long vowels immediately before or after the principal accent are pronounced half-long; the tense long vowels keep their quality and do not become lax. The half-long vowels.

Examples. a) Before the principal accent: lebend *lē¹bnt* — lebendig *lē¹bē²ndi²h¹*, Probe *p¹rō¹bə¹* — probieren *p¹rō¹bi¹rn*, Chorkhō¹r — Choral *k¹hō¹rā²l*, Datum *dā²tū²m* — datieren *dā²tū¹rn*, Studium *štū¹dī²u²m* — Student *štū¹dē²nt*, da *dā²* — damit *dā²mī²t*, zu *tsū¹* — zugleich *tsū¹glō²h¹*, wahr *wā²r* — wahrhaftig *wā²rhdā²fti²h¹*, vor *fō¹r* — vorbei *fō¹rbō²*, wohl *wō¹l* — wohlan *wō¹lā²n*, Süd *zū¹t* — Südwest *zū¹twē²st*, Jahr *jā²r* — Jahrhundert *jā²rhdndrt*, viel *fī¹l* — vielleicht *fī¹lō²ht*.

b) After the principal accent: lesbar *lē¹sbā²r*, Irrtum *i²rthū¹m*, Heirat *hē²ā²rā²t*, Zierat *tsi¹rā²t*, Berta *bē²rthā²*, Jena *jē¹nā²*, Uhu *ū¹hū¹*, Hindu *hi²ndū¹*, Juli *jū¹li¹*, Lüt-zow *lū²tsō¹*, so *zō¹* — also *ā²lzō¹*, See *zē¹* — Nordsee *nō²rtzē¹*, zehn *tsē¹n* — fünfzehn *fū²m²ftsē¹n*, Teil *thō²l* — Urteil *ū²rthō²l*, Schönheit *šō¹nhō²l*, Maria *mā²riā²*, Doctoren *dō²kthō¹rn* — Doctor *dō¹kthō¹r*.

c) Sometimes a double change takes place owing to shifting of the accent; e. g. Drama *drā²mā²* — dramatisch *drā²mā¹ti²š*, Juno *jā¹nō¹* — junonisch *jū¹nō¹ni²š*, Caesar *tsē²zā²r* — Caesaren *tsē²zā²rn*, Idee *i¹dē¹* — ideal *i¹dē¹ā²l*, Kleinod *kli¹ō²nō¹t* — Kleinodien *kli¹ō²nō¹dī²n*.

74. In certain words the short vowel becomes long, if an additional syllable follows: *Zug *tsu²h²* — Zuges *tsū²gā¹š*,

Short and long vowels in the same word. Züge *tʃū¹jə¹*, *Schub *ʃu²p¹* — Sehnes *ʃū¹bə¹s*, *Lob *lo²p¹* — Lobes *ló¹bə¹s*, *grob *gro²p¹* — grobe *gró¹bə¹*, *Grab *gra²p¹* — Grabes *grá²bə¹s*, Gräber *gré²bɪ*, *Trab *tra²p¹* — Trabes *trá²bə¹s*, *Bad *ba²t* — Bades *bá²də¹s*, *Rad *ra²t* — Rades *rá²də¹s*, *Glas *glá²s* — Glases *glá²zə¹s*, *Schlag *ʃlá²h²* — Schlages *ʃlá²gə¹s*, *Schmied *ʃmí²t* — Schmiedes *ʃmí¹də¹s*, *Stadt *ʃta²t* — Städte *ʃté²tə*; ob *o²p¹* is only in *Obacht *ó¹bá²h²t* long. Noteworthy is Charakter *ká²rá²kɪ*, but Charaktere *khá²:ra²kɪhé¹rə¹*. Of verbal forms may be mentioned *hat, *hast, *gehabt, *hatte, but hābe, and kriegen *kri¹ju*, which in all forms is pronounced with *i¹*, if it is = “to wage war”; but if it means “to get”, then the forms *kriegst, *kriegt, *gekriegt and the whole imperfect kriegte are pronounced with *i²*, *kri²h¹ʃt* etc.

Some monosyllabic words with a long vowel appear with a short one in certain compounds: ur- *ur¹r* — *Urteil *ú²:tɪhə²ɛl*; vor *fō¹r* — *Vorteil *fó²:tɪhə²ɛ²l*, *vorwärts *fó²rwé²:tʃs*; zu *tʃū¹* — *zur *tʃu²r*, *zum *tʃu²m*; hoch *hō¹h²* — *Hochzeit *hó²h²tʃə²ɛ²t*, *Hoffahrt *hó²fá²:t* (*h²f* assimilated to *f*); der Wal *wā²l* (whale) — *Walfisch *wá²lfi²s*, *Walrosz *wá²lró²s*; vier *fī¹r* — *vierzehn *fí²:tʃsɛ²n*, *vierzig *fí²:tʃsi²h¹*, *Viertel *fí²rtɪ*, *vierteilen *fí²:tɪhə²ɛ²lɛ*; so also jene *jé¹nə¹* — *jenseits *jé²nzə²ɛ²tʃs*; and with different spelling: die Wahl *wā²l* (battle field) — *Walhalla *wá²lhá²lā²*, *Walküren *wá²l-khū¹rn*; wohl *wō¹l* — *Wollust *wó²lū²ʃt*; Heer *hē¹r* — *Herzog *hé²:tʃsō¹h²*, *Herberge *hé²rbé²:rjə¹*.

V. Synthesis.

75. Although in the preceding paragraphs we had to examine the sounds in their isolation, and often with regard to only one of their qualities, we had nevertheless also sometimes to pay attention to their surroundings and to anticipate some facts, which really belong to the province of **synthesis** (**Combinationslehre**), which has to deal with the concurrence of all the properties of the sounds and their mutual relations. Synthesis
in general.

76. After a sound has been formed, the organs of speech do not return to the organic basis in order to articulate the following sound, but the transition from one sound to another takes place in the shortest way, and Glides;
simplification
of articulation. if, in doing so, the breath of expiration continues, sounds of transition are formed, which are called **glides** (**Gleitlaute**), in contradistinction to the sounds with fixed positions (**Stellungslaute**). E. g. in the word *Lauf* $l v^2 \varrho^2 f$ the organs of speech, after having produced *l*, do not return to the organic basis in order to form v^2 , and after having pronounced v^2 , they do not return to the organic basis in order to form ϱ^2 , etc., but pass directly from the *l* position to the v^2 position, from the v^2 position to the ϱ^2 position, and from this to the *f* position. The glides which are formed in the transition from *l* to v^2 , from v^2 to ϱ^2 , from ϱ^2 to *f*, need not be expressed in writing, as they result automatically.

A consequence of the tendency to perform the movements of articulation in the shortest way and in the shortest time, is the tendency to perform only once those movements which are common to the neighbouring sounds. The principal cases which result from this are the following:

77. When a *d* or *t* is followed by an *l*, e. g. in *edle*,

Atlas, in the explosion of *d* or *t* the occlusion, which is formed by the alveoli and the tongue, is not opened in order to form a new occlusion for *l* exactly at the same place, but the explosion of *d* or *t* takes place through forming lateral openings, necessary for the articulation of *l*. (**Lateral explosion instead of the median one.**)

In a similar manner in the groups *bm*, *p¹m¹*, e. g. in Obmann, and in the groups *dn*, *tn*, e. g. in Edna, Ätna, the usual explosion of the bilabial and alveolar occlusive sounds does not take place, to be immediately followed by the same occlusion for *m* and *n*, but the explosion of the oral occlusive sounds is carried out through the nose, after the nasal cavity has been opened by lowering the velum with the uvula, as is necessary for producing *m* and *n*. (**Nasal explosion instead of the oral one.**)

78. Whilst a sound is being articulated, organs of speech not active in forming this sound can simultaneously take the position for the formation of the following sound. Whilst e. g. *m* in Mund, Mond, Mann, Münze etc. is being articulated, the tongue, perfectly disengaged, can already take the position for *u²*, *o²*, *a²*, *ü²* etc., by which, of course, the oral cavity, the resonance chamber of *m*, and therefore also its tone is modified.

Such an anticipation takes place, if two occlusive sounds follow upon each other, as in *lobte* *l⁰p¹t⁰*, *altklug*, *alt-preuszisch*, *Akte*. Here the occlusion of the second consonant is made before the occlusion of the first is opened. The consequence is that in *lobte*, *altklug*, where the place of occlusion of the second consonant is situated behind that of the first consonant (the alveolar *t* behind the bilabial *p¹*, and the mediopalatal *k* behind the alveolar *t*), the explosion of *p¹* (in *lobte*) and of *t* (in *altklug*) is hardly audible; but, when, as in *alt-preuszisch*, *Akte*, the place of occlusion of the second consonant is situated before that of the first consonant, the explosion of the first occlusive sound (*t* in *alt-preuszisch*, *k* in *Akte*) is completely suppressed.

79. Assimilation too is a result of the tendency to carry out movements of articulation, if possible, only once.

1) If by anticipation movements of articulation **Assimilation** are transferred to the preceding sound, we have **regressive assimilation**. So, for instance, in *biegt* $b\bar{e}^1h^1t$, *Abt* a^2p^1t , *alt* a^2lt the voicelessness of the *t* is transferred to the preceding voiced *g*, *b*, *l*; cf. §§ 50, 2. 51, 2. 52, 2. (To make a voiceless consonant voiced by assimilation is repugnant to German.)

It is the effect of regressive assimilation, that before the labiodental *f* an bilabial m^1 or p^1 becomes labiodental too, as in *Dampf* $da^2m^2p^2f$, *Abfall* $a^2p^2f\bar{a}^2l$, or that *Ausschusz* $\bar{a}^2\bar{u}^2s\bar{s}\bar{u}^2s$, *Kunststück* $k\bar{h}\bar{u}^2ns(f)\bar{s}\bar{t}\bar{u}^2k$ become $\bar{a}^2\bar{u}^2\bar{s}\bar{s}\bar{u}^2s$, $k\bar{h}\bar{u}^2n\bar{s}\bar{t}\bar{u}^2k$ (cf. §§ 54. 80).

2) If the movements of articulation of one sound are maintained and extended to the following one, we have **progressive assimilation**. Here belong such cases, as *zwar* $t\bar{s}b\bar{a}^2r$, *klang* kla^2w , *Schmerz* $\bar{s}m^1e^2rts$, *sittsam* $z\bar{i}^2t\bar{s}\bar{a}^2m$ etc., in which the voicelessness of *t*, *k*, *s*, *t* make the following voiced consonants *b*, *l*, *m*, *z* (cf. *heilsam* $h\bar{o}^2e^2lz\bar{a}^2m$) voiceless too; cf. §§ 51, 3, 5. 52, 1.

Owing to the tendency to save movements of articulation we have prepalatal fricatives after the front vowels, but mediopalatal fricatives after the back vowels, for in the former case consonants and vowels have in common the articulations of the front of the tongue, in the latter case the articulations of the back of the tongue, e.g. *ich* i^2h^1 , *biegen* $b\bar{i}^1jn$, but *ach* a^2h^2 , *bogen* $b\bar{o}^1gn$; cf. §§ 21. 22.

Note. Progressive assimilation can also be extended to the beginning sound of a following word, if it is enclitic, e.g. *hast du* $h\bar{a}^2st\ d\bar{u}^1 \rightarrow h\bar{a}^2stt\bar{u}^1 \rightarrow h\bar{a}^2st\bar{u}^1$, *hat der Mann* $h\bar{a}^2td\bar{r}\ m\bar{a}^2n \rightarrow h\bar{a}^2tt\bar{r}\ m\bar{a}^2n \rightarrow h\bar{a}^2t\bar{r}\ m\bar{a}^2n$, *als sie* $a^2ls\ z\bar{i}^1 \rightarrow a^2l\bar{s}\bar{s}\bar{i}^1 \rightarrow a^2l\bar{s}\bar{i}^1$. But if the second word is stressed, the assimilation is avoided: *hast* $h\bar{a}^2st\ d\bar{u}^1$, *als* $a^2ls\ z\bar{i}^1$.

80. Due to the principle of saving the articulation as much as possible, is also the treatment of double consonants, if they meet in the two parts of a compound or in two words, which are spoken with one accent, as in *Nottaufe* $n\bar{o}^1t\bar{h}\bar{u}^2\bar{o}^2f\bar{a}^1$ or *hast du* $h\bar{a}^2st\bar{u}^1$. Here we have according to § 54 not two individual *f*'s, but only one long *t*.

Note. It may be mentioned, that in the colloquial speech

Reduction
of groups
of consonants.

of the educated classes reductions occur which the literary language still refuses to recognise; e. g. the dropping of *t* in und between two numerals (dreihundfünfzig $dr\grave{a}^2\varrho^2u^2n\acute{f}\ddot{u}^2m^2ftsi^2h^1$), or in the unstressed ist (das ist gut $d\grave{a}^2s\acute{i}^2s\acute{g}\acute{u}^1t$) or the dropping of *d* in the unstressed dem ($d\grave{m}$) or den ($d\acute{n}$): auf dem Tisch $\acute{a}b^2\varrho^2fm\acute{t}hi^2s$, wir gehn in den Garten $wi^1r\acute{g}\acute{e}^1n\acute{i}^2nn\acute{g}\acute{a}^2rt\acute{n}$.

81. We mean by **syllable** a group of sounds (or a single sound) which is separated from the preceding and the following group of sounds (or single sound) either 1) by the relatively least sonority (**sonoric syllable, Schallsilbe**); or 2) by the relatively weakest expiration (**dynamic syllable, Expirations-silbe, Drucksilbe**); or 3) by both simultaneously.

Definition
of syllable;
sonoric and
dynamic
syllables.

1) The sonority is given once for all by the character of the sound. The most sonorous sounds are the vowels, at the head of which is *a*, as it is pronounced with the widest opening of the mouth (uau can be pronounced monosyllabic as $u^2a^2u^2$, but both *a*'s in aua can never become consonants); then follows *r*, then *l*, then the nasals, then the voiced fricatives, then the voiced occlusive sounds, then the voiceless fricatives, and lastly the voiceless occlusive sounds. The least sonority is therefore to be found with aua in u^2 , with renne in *n*, with Wandel in *d*, with Apfel in p^2 , spoken: $\acute{a}^2u^2a^2$, $r\acute{e}n\acute{a}^1$, $w\acute{a}^2nd\acute{l}$, $\acute{a}^2p^2f\acute{l}$. Karl $k\acute{h}a^2rl$ and Halm $h\acute{a}^2lm$ show that *r* has more sonority than *l*, and *l* more sonority than the nasal, for a word Kalr or Haml would be pronounced with two syllables $k\acute{h}a^2l\acute{r}$, $h\acute{a}^2m\acute{l}$.

Accordingly the border-line of sonority, marked by \cdot under the symbol, lies always in the sound itself; in the occlusive sounds it is formed by the occlusion itself, the soundless pause.

2) The greatest reduction of the force, with which the breath required for speaking is expelled by the lungs, the relatively weakest expiration (the conditions of which are by no means perfectly elucidated yet) is not fixed by the character of a certain sound, but can appear at liberty before, after, or within the sound; for instance, the border of pressure or expiration, marked by $-$, lies before the consonant in wohne $w\acute{o}^1-n\acute{a}^1$, after it in Wohnhaus $w\acute{o}^1n-h\acute{v}^2\varrho^2s$, within the consonant in hatte $h\acute{a}^2t\acute{a}^1$, which is really an example for

3) where border-line of sonority and border-line of expiration coincide.

82. The division of syllables in a spoken German word is by no means identical with the more or less arbitrary habit of spelling, e. g. the separation lan-dend accord-
Separation
of syllables
in uncom-
pounded words.
 ing to the German orthography is quite as wrong as the separation land-ing according to the English orthography; in both cases the border-line of the syllables is in *d*.

We can establish the following rules for the division of syllables in uncompounded German words:

1) In one occlusive sound, or a group of consonants containing one occlusive consonant, the border-line of the syllables lies always in the occlusive sound itself — quite naturally, as during the occlusion the sonority and the expiration are both zero. An occlusive sound therefore belongs to both syllables, separated by the border-line of sonority and the border-line of expiration. E. g. habe $h\acute{a}^2b\grave{o}^1$, hatte $h\acute{a}^2t\grave{o}^1$ (one *t*; cf. § 53), kämpfe $k\grave{h}\acute{e}^2m^2p^2f\grave{o}^1$, wandle $w\acute{a}^2nd\grave{l}\acute{o}^1$, wachsen $w\acute{a}^2k\grave{s}n$, Herzen $h\acute{e}^2r\grave{t}s\eta$, Hexe $h\acute{e}^2k\grave{s}\acute{o}^1$, Metrum $m\acute{e}^1t\grave{r}u^2m$, Liebling $l\acute{i}^1p^1l\grave{i}^2n$, Labsal $l\acute{a}^2p^1s\grave{a}^2l$, Mädchen $m\acute{e}^2t\grave{h}^1\eta$, Bündnis $b\ddot{u}^2n\grave{t}n\grave{i}^2s$, Freundschaft $f\grave{r}\acute{o}^2\ddot{u}n\grave{t}s\grave{a}^2ft$, friedlich $f\grave{r}\acute{i}^1l\grave{i}^2h^1$, duldsam $d\acute{u}^2l\grave{t}s\grave{a}^2m$. For words the suffixes of which begin with an occlusive sound or an *h* see § 83.

Note. Strictly speaking, on account of the soundless pause we should expect in any occlusive sound, and so even in p^1 of *Pein* or in t of *Hut*, a syllabic boundary: $p^1h\acute{o}^2e^2n$, $h\ddot{u}^1t$, so that in p^1 the making of the occlusion, and in t the opening of the occlusion would form a syllable. That we do not regard *Pein* and *Hut* as disyllabic is due to the fact that the making of the occlusion of p^1 is not preceded, and the opening of the occlusion of t is not followed, by a sonant.

2) With two occlusive sounds, or a group of consonants containing two occlusive sounds, the boundary of sonority and expiration lies between them, because in accordance with § 78 the explosion of the first occlusive sound is

reduced to a minimum or quite suppressed; e. g. backte $b\acute{a}^2k\perp t\acute{\alpha}^1$, lobte $l\acute{o}^1p^1\perp t\acute{\alpha}^1$, wölbte $w\acute{o}^2l^1p^1\perp t\acute{\alpha}^1$.

3) With one consonant which is not an occlusive one the syllabic limit (border-line of sonority) lies within it, if a short vowel precedes; but if a long one precedes, the syllabic limit (border-line of expiration) lies before the consonant. E. g. falle $f\acute{a}^2l\acute{\alpha}^1$, but fahle $f\acute{a}^2\perp l\acute{\alpha}^1$; essen $\text{?}\acute{e}^2s\eta$, but aszen $\text{?}\acute{a}^2\perp s\eta$; Kamme $k\acute{h}\acute{a}^2m\acute{\alpha}^1$, but kamen $k\acute{h}\acute{a}^2\perp m\eta$; waschen $w\acute{a}^2s\eta$, but wuschen $w\acute{u}^1\perp s\eta$; spreche $\text{?}p^1r\acute{e}^2h^1\acute{\alpha}^1$, but Sprache $\text{?}p^1r\acute{a}^2\perp h^2\acute{\alpha}^1$; schaffen $\text{?}\acute{s}^2\acute{a}^2f\eta$, but schufen $\text{?}\acute{s}^2\perp f\eta$; Finger $f\acute{i}^2\eta$; Frage $f\acute{r}\acute{a}^2\perp g\acute{\alpha}^1$; Frauchen $f\acute{r}\acute{o}^2\perp h^1\eta$; rauchen $r\acute{v}^2\perp h^2\eta$.

4) With two consonants neither of which is an occlusive sound, the syllabic limit (border-line of expiration) lies between them; e. g. Perle $p^1h\acute{e}^2r\perp l\acute{\alpha}^1$, arme $\text{?}\acute{a}^2r\perp m\acute{\alpha}^1$, helfe $h\acute{e}^2l\perp f\acute{\alpha}^1$, Berge $b\acute{e}^2r\perp j\acute{\alpha}^1$, lächle $l\acute{e}^2h^1\perp l\acute{\alpha}^1$, Burschen $b\acute{u}^2r\perp s\eta$, Mannschaft $m\acute{a}^2n\perp \text{?}\acute{s}^2\acute{a}^2ft$, Vöglein $f\acute{o}^1h^1\perp l\acute{\alpha}^2\perp e^2n$, Mannheit $m\acute{a}^2n\perp h\acute{\alpha}^2\perp \text{?}\acute{s}^2ft$, boshaft $b\acute{o}^1s\perp h\acute{\alpha}^2ft$. In three non-occlusive sounds the syllabic limit (border-line of sonority) lies in the least sonorous sound: Wormser $w\acute{o}^2rm\text{?}z\eta$, Kürschner $k\acute{h}\acute{u}^2r\text{?}s\eta$.

83. In compounds the syllabic limit (border-line of expiration) lies between the two parts of them; e. g. Haus-hund, Ge-
Syllabic limitin compounds. birge, Sieg-fried, Bräuti-gam, ver-achten, un-artig. In the same way in foreign words, when the speaker has a clear notion of the individual parts of the compound: an-organisch, Anti-christ. But in most cases the speaker is not thinking or is not conscious of the etymological components, and the foreign word is treated according to the rules valid for the simple words; e. g. Subordination $z\acute{u}^2p^1\acute{o}^2rdi^2n\acute{a}^2t\text{?}s\acute{i}^2\acute{o}^1n$ instead of $z\acute{u}^2p^1\perp \acute{o}^2rd$, Interesse $\text{?}\acute{i}^2\eta t\acute{\alpha}^1r\acute{e}^2s\acute{\alpha}^1$ instead of $\text{?}\acute{i}^2\eta t\acute{\alpha}^1r\perp \text{?}\acute{e}^2s\acute{\alpha}^1$, Monarch $m\acute{o}^1\acute{n}\acute{a}^2r\acute{h}^1$, Energie $\text{?}\acute{e}^2\eta e^2rg\acute{i}^1$, Abort $\text{?}\acute{a}^2b\acute{o}^2r\text{?}t$ instead of $\text{?}\acute{a}^2p^1\perp \acute{o}^2r\text{?}t$ (miscarriage; but the German Abort is $\text{?}\acute{a}^2\text{?}^1\perp \acute{o}^2r\text{?}t$ W. C.).

Also certain German compounds are treated as simple words, viz. compounds, which originally began their second parts with the glottal stop, but have now given it up and begin them with a vowel; they are mentioned in § 28 note 2; e. g. Obacht $\text{?}\acute{o}^1b\acute{a}^2h^2t$, herein $h\acute{\alpha}^1r\acute{\alpha}^2\text{?}e^2n$, erinnern $\text{?}\acute{\alpha}^1r\acute{i}^2n\eta$,

vollenden $f\bar{o}^2l\bar{e}^2nd\eta$. So is also treated *Friedrich $f\bar{r}i^1d\bar{r}i^2h^1$, *Knoblauch $k\eta\bar{o}^2b\bar{l}\bar{o}^2\bar{o}^2h^2$, *Handschuh $h\bar{a}^2\eta\bar{t}\bar{s}\bar{u}^1$ (but Bundschuh $b\bar{u}^2\eta\bar{t}\bar{s}\bar{u}^1$) and other quite familiar compounds in which the speaker does not think of their individual components. Especially may be mentioned compounds with a long consonant, discussed in § 54, where the syllabic limit must necessarily fall within the consonant Nottaufe $n\bar{o}^1\bar{t}\bar{h}\bar{o}^2\bar{o}^2f\bar{o}^1$ Schnellläufer $\bar{s}\eta\bar{e}^2\bar{l}\bar{o}^2\bar{u}^2f\bar{r}$.

Note. In the same way are also treated two independent words, if they form one stress-group and the first word ends with the same consonant with which the second begins: hast du $h\bar{a}^2s\bar{t}\bar{u}^1$; kann nicht $k\bar{h}\bar{a}^2\eta\bar{i}^2h^1t$; lauf flink $l\bar{o}^2\bar{o}^2f\bar{l}i^2\eta k$; nimm | alle | Kraft zu | sammen $k\bar{r}\bar{a}^2\bar{f}\bar{t}\bar{s}\bar{u}^1$. (But in two stress-groups: laut | töne der | Sang $l\bar{o}^2\bar{o}^2\bar{t}\bar{h}\bar{o}^1n\bar{o}$.) With regard to the division of the syllables, enclitic words beginning with a vowel are treated analogously; e. g. will ich $wi^2li^2h^1$, hat er $h\bar{a}^2\bar{t}\bar{o}^1r$.

On the other hand in certain simple words the division of syllables takes place in accordance with the rule for the compounds: viz. in derivatives with heavy suffixes beginning with an occlusive sound or an h (-bar, -haft, -haftig, -heit, -keit, -tum, -bold). These suffixes were originally independent words, and formations with them really compounds. E. g. fruchtbar $f\bar{r}\bar{u}^2h^2\bar{t}\bar{b}\bar{a}^2r$ orig. fruit-bearing, lesbar $l\bar{e}^1s\bar{b}\bar{a}^2r$; krankhaft $k\bar{r}\bar{a}^2\eta k\bar{h}\bar{a}^2\bar{f}\bar{t}$ orig. with illness affected, leibhaftig $l\bar{a}^2\bar{e}^2\eta^1\bar{h}\bar{a}^2\bar{f}\bar{t}\bar{i}^2h^1$; Gottheit $g\bar{o}^2\bar{t}\bar{h}\bar{a}^2\bar{e}^2\bar{t}$ orig. a god's rank, quality, Ewigkeit $\bar{e}^1wi^2h^1k\bar{h}\bar{a}^2\bar{e}^2\bar{t}$; Ritters-tum $r\bar{i}^2\bar{t}\bar{r}\bar{t}\bar{h}^1\bar{u}^1m$ orig. a knight's rank or condition, Reich-tum $r\bar{e}^2\bar{e}^2\bar{h}^1\bar{t}\bar{h}^1\bar{u}^1m$, Wachstum $w\bar{a}^2k\bar{s}\bar{t}\bar{h}^1\bar{u}^1m$; Raufbold $r\bar{a}^2\bar{o}^2\bar{f}\bar{b}\bar{o}^2\bar{l}\bar{t}$.

VI. Accentuation.

84. With the transition from one syllable to another is usually also combined a change of accent. By **accent** we mean the degree of force or of pitch with which one or several groups of sounds are pronounced. As every syllable is pronounced with a certain force and a certain pitch, strictly speaking, every syllable has an accent, but in practice (and so in this book too) we ascribe an accent to those syllables only, which are distinguished from other syllables by a special force or special interval of tone.

85. From a strictly phonetical point of view we ought to distinguish between:

1) **Syllable-accent** which governs the gradation of force and pitch of the individual sounds within a syllable; e. g. in all a^2l a^2 , as the more sonorous sound, is pronounced with greater force than l ; in the inquiring $so?$ $z\bar{o}^1$ z is spoken with a deeper note than \bar{o}^1 .

2) **Stress-group-accent** which rules the gradation of force and pitch of the individual syllables within a stress-group; e. g. in $er\ kommt | morgen$ $a^1rk\h{o}^2m^1t | m\acute{o}^2rj\eta$ both o^2 's are pronounced with a greater force and with a higher note than a^1 in the first stress-group and η in the second.

3) **Sentence-accent** which governs the gradation of force and pitch of the individual stress-groups within a sentence; e. g. if by the sentence $kommt\ er | morgen?$ we ask about the time of his arrival, not about the fact of his coming, we pronounce the whole stress-group $morgen$ with a greater force and a higher note than the stress-group $kommt\ er$.

For practical purposes, however, it is more convenient to set aside this classification, and to distinguish only between

word-accent and **sentence-accent**; although the words, as shown in § 5, by no means coincide with the stress-groups, nevertheless the division of a sentence into stress-groups mainly depends on the fixed accentuation of the words.

86. The distribution of both the word-accent and the sentence-accent is due to three (or four) factors:

1) Owing to the rules of **grammar** certain parts (syllables, words) require a stronger or a weaker accent.

The grammatical, logical (or psychological), and physiological factors in the word-accent and sentence-accent.

2) For either **logical** or **psychological** reasons a special emphasis is given to certain parts which in view of the thought or feeling respectively are more important than others for the addressed or for the speaking person.

3) In accordance with **physiological** laws we have a tendency to ease the process of breathing in speaking by alternating accented with unaccented syllables as regularly as possible.

For the **word-accent** the grammatical factor is the essential one; the grammar fixes the word-accent once for all and states the gradation of the accents in the syllables; e. g. glücklich^{er}, Zuf^{all}. The part played here by the logical or psychological factor is quite infinitesimal. A logical word-accent appears occasionally, in order to express a contrast; e. g. das Kind ist nicht erz^{ogen} (educated), sondern verz^{ogen} (spoilt); ré^{al} und idé^{al} (else always ré^{al}, idé^{al}). A psychological word-accent can be heard from excited persons; e. g. ú^{ms}onst hab' ich gelé^{bt}. These are three of the rare examples, in which a discrepancy from the normal grammatical accent is produced.

More important for the word-accent is the physiological factor; cf. §§ 90. 93. 95. 100, 3, 4, 7. To this is due that in secondary syllables (prefixes, suffixes, middle syllables) with heavier sounds (größerer Lautgehalt), such as long vowels, diphthongs, groups of consonants, a secondary accent appears; for such a syllable causes a greater strain on the expiration than a light syllable with a short vowel, especially *i*² or *a*¹; cf. §§ 90. 91. Due likewise to a physiological law is the transference of the secondary accent from one secondary syllable to another; cf. §§ 90. 93.

For the **sentence-accent** the logical or psycho-

logical element is the essential one; the sentence-accent can be shifted, and its object is to increase the intelligibility of an uttered thought or feeling; e. g. ein glücklicher Zufall fügte es, dasz er ihn traf; but welch ein glücklicher Zufall! In the former sentence Zufall is the more important conception, in the latter glücklich; cf. § 125. Collateral factors, which in determining the distribution of the sentence-accent must not be underrated, are given by grammar (cf. §§ 122—124) and by physiology (cf. § 126).

We may therefore briefly state the difference between word-accent and sentence-accent by saying, that the former is nearly always of a grammatical nature, the latter chiefly of a rhetorical nature. Word-accent and sentence-accent are not antagonists, but the sentence-accent coincides with a word-accent.

87. The accent, marked by ´, characterises the force and is called **stress** (**expiratorischer, emphatischer, dynamischer Accent**). The physiological explanation of it is that a more energetic impulse of expiration increases the **amplitude of the vibrations** of the vocal chords, by which are produced greater sound-waves which we perceive acoustically as an increased loudness.

The accent, marked by ~, characterises the depth or height of a tone and is called **pitch** (**chromatischer, tonischer, musikalischer Accent**). The essence of this accent lies in the fact that with a higher tone the **velocity of the vibrations** of the vocal chords increases.

Both accents exist in any language, only in one language the difference of force, in another the difference of pitch is more prominent. As a louder syllable can be pronounced with a deeper tone, and a lower syllable with a higher tone, pitch and stress need not always fall on the same syllable. E. g. in er kommt morgen *mo²r* is spoken with greater stress and higher pitch than the syllable *jū*; but in kommt er morgen? *mo²r* has the stronger, *jū* the higher accent.

Note. Test: Syllables which, when loudly spoken, are accentuated in different manner, but, when whispered, show the same accent, have pitch. Syllables with which in cold air a cloud of breath is to be seen have stress.

88. The **pitch** plays in German (as well as in English)

a rather subordinate part. In German it does not serve to distinguish words from each other (as it does in Swedish, where e. g. *anden* means "the duck", but *ānden*, with a considerably deeper tone in the first syllable, means "the ghost"), but it finds its principal application as sentence-accent, and that not so much to characterise a thought as a mood or emotion. So e. g. the high key is peculiar to the expressions of pleasant or unpleasant excitement, the deep key to those of resignation, sorrow, and solemnity. In general the maintaining or raising of the tone indicates a continuation of a thought or mood, as e. g. in asking; a thesis indicates a termination, as in an affirmative proposition.

89. In word-stress we have to distinguish several degrees of force. The strongest is the **principal stress** (**Hauptaccent**, erroneously **Hochton**), indicated by ' ; we call the less strong stresses, which in English, and still more in German, are considerably weaker than the principal stress, **secondary stresses** (**Nebenaccent**, erroneously **Tieftton**), indicated by ' , or, if it is necessary to distinguish secondary stresses of different force, by ' , ' ' , ' ' ' (the weakest). **Unstressed** (**unbetont**) is an incorrect term for those syllables which reduce their stress so far that they can only just be perceived; a certain degree of expiration, ever so slight, is required at any rate. Lack of stress is not indicated by any mark. E. g. in *Altertumskunde* : *á²lt̥r-¹t̥hū¹ m¹s̥k̥hū²ndə¹* *r* and *ə¹* are stressless, *ū¹* has the weaker, *u²* the stronger secondary stress, and *a²* the principal stress.

90. 1) Syllables, containing the vowels *ə¹*, *r*, *l*, *u*, *ŋ* may be regarded as **stressless**; e. g. lobe *lób¹ə¹*, guter *gút¹tr*, guten *gút¹t̥u*, gutem *gút¹tm̥*, gutes *gút¹t̥əs*, Handel *hád²ndl*, Handelshaus *hád²ndl̥shù²q²s*, lobend *lób¹b̥t̥*, Herzens *hé²rt̥s̥s*, steinern *št̥ə²q²nr̥n*.

2) Suffixes, containing *i²*, as -ig (freudig), -ich (Fittich), -icht (steinicht), -isch (kindisch), -lich (kindlich), -zig, -szig (zwanzig, dreiszig), may be treated as stressless.

3) The foreign terminations -ös, -üs, -ön, -üm in dissyllabic words, e. g. *Páthos*, *Lóndon*, *Circus*, *Métrum* cf. § 70, 1; but *Léxikón*, *Hábitus* etc.

As, however, for physiological reasons, several consecutive unstressed syllables could easily make the speaker breathless,

the tendency exists to a great extent to alternate stressed with unstressed syllables (cf. §§ 93. 95. 100, 3, 4, 7. 126); accordingly, of two consecutive unstressed syllables one receives a secondary stress; e. g. lobte *lò¹p¹tə¹*, but redete *ré¹dò¹tə¹*; handle *hà¹ndlə¹*, but handele *hà¹ndl¹lə¹*; fründig, but fründiges Fést and fründigès Gemüt.

91. A secondary stress appears in syllables with heavier sounds, especially with other sounds than those mentioned in § 90 (a few cases with *i²* are excepted); cf. Jungfer *jú²wɸ¹r* but Jungfrau *jú²wɸ¹rò²*; Junker *jú²wɸ¹r* but Jungherr *jú²wɸ¹hè²r*. In particular a secondary stress appears in the following cases:

1) On the suffixes: -sal (Mühsal), -selig (feindselig), -and (Héiland), -schaft (Féindschaft), -sam (héilsam), -bar (dankbàr), -haft (wàhrhaft), -at (Héimat), -wärts (rückwärts); -ut (Ármüt) -mund (Léumünd), -ung (Zéitung), -tum (Réichtum); -od (Kléinód), -öde (Éinöde); -in (Gráfin), -ing (Mésing), -ling (Jångling), -lings (blindlings), -nis (Zéugnís), -rich (Wüterich); -lein (Kindléin), -heit (Schönhèit), -keit (Néuigkèit).

2) In isolated words with other vowels than *a¹* and *i²*; e. g. Éidàm, 'A hòrn, 'U hò, 'Arbèit, 'Amèise, Ave *à²wè¹*; proper names, as Bértà, Húgò, Rigi *rí¹gí¹* etc.; cf. § 90, 3.

3) On the root-syllable of German words with a foreign termination bearing the principal stress; cf. § 96. E. g. Glàsúr, sehàttieren, Dròstéi, Hòrníst, Stèllàge etc.

4) On the root-syllable of certain German words which have the principal stress on a suffixal syllable; e. g. lèbén-dig, lèibhàftig, Wàchhólder etc.; cf. § 95.

5) If in foreign words the principal stress is preceded (or followed) by more than one syllable, usually a secondary stress falls upon the first (or on the last), e. g. Bibliothék, Phàntasíe, Tèlegràph, Rèdactéur, Bàronésse etc.; Córridòr, trànsitiv, Còntinènt etc.

6) In foreign words the syllable immediately before the principal stress has a secondary stress, if the etymological value of this syllable is intelligible also to an uninitiated speaker; e. g. Bankier *bà²wɸ¹kí²é¹* but Barbier *ba²rbí¹r*, Export *è²ksɸhó²ɸt* but Examen *è²ksà²mɸn*, incognito *ì²wɸkɸhó²wɸnì²tɸò¹* but infam *ì²mɸfà²m*.

7) If an independent word is subordinated to another in a compound, its principal stress is reduced to a secondary one; e. g. *über* and *setzen*, but *übersetzen* "to ferry", and *übersetzen* "to translate"; *Hof* but *Kirchhof*. If such a compound word is compounded once more, all the accents are reduced by one degree, e. g. *Dörfkirchhof*.

92. In general one mark (') for the secondary stress is sufficient; '' and ''' are only used, if in the same word secondary stresses of different degrees appear. But it must be noticed that the sole secondary stress has by no means the same force in all words. The secondary stress is all the stronger, the more remote it is from the preceding or following principal stress. Therefore, *Bürgerin* or *Bürgerinnen* has a stronger secondary stress than *Gätin* or *Gättinnen*; in *herrlicheren Gesang*, there is a stronger secondary stress than in *herrlicheren Sang*. In the same way a secondary stress at the beginning of a sentence is stronger than in the middle of it, as it is not subordinated to a preceding principal stress: in *unerreicht sind die Taten der Helden* *in* is far more strongly accentuated than in *die Taten der Helden sind unerreicht*.

Especially strong and bordering on the principal stress is the secondary stress in a group of certain compounds, as *blutarm*, *schwarzweißrot* (§ 101, 4), *Südwest* (§ 100, 6), *uralt* (§ 104), *erzgrób* (§ 105).

93. The rules for the position of the secondary stress must always be very vague, as in consequence of the rhythmic tendency (cf. § 90) to alternate between stressed and unstressed syllables the secondary stress undergoes great fluctuations. So, e. g. *Zeitungen* *gelesen* can be changed into *Zeitungen* *gelesen*; for *Vorurteil*, *Sonnabend*, *Handarbeit*, *buchstabieren* can often be, and is often pronounced *Vorurteil*, *Sonnabend*, *Handarbeit*, *buchstabieren*; and the more familiar such a compound is, the more easily a rhythmic change takes place.

94. Whilst there is a certain fluctuation between unstressed syllables and syllables with a secondary stress, a distinct boundary-line can be drawn between these two groups on one side and the syllables with a

Gradation of the secondary stress.

Transference of the secondary stress.

Principal stress in simple words.

principal stress on the other (with exception of a few compound words, cf. §§ 92. 100. 6. 101, 4).

As in the other Teutonic languages, so also in German the principal stress rests always (the few words only, mentioned in §§ 95 and 96, excepted) on the most significant syllable of the word, the bearer of the meaning, the root-syllable, which in German uncompounded words is identical with the first syllable (with quite sporadic exceptions, as *sind*, *séien*, where *s* represents the root and *-ind*, *-eien* are terminations). Accordingly, the same syllable has always the strongest stress, be the number of the following syllables ever so great; e. g. *Léid*, *léiden*, *Léidenschâft*, *léidenschâftliche're* etc.

95. Transference of the principal stress is to be found in quite isolated words, and is to be explained partly by the influence of the **analogy of foreign words**. Thus the accentuation of **Forélle* (instead of *Fórëlle*), **Hòrnisse* (instead of *Hórnisse*), **Hèrmelin* (*hè²rma¹lî¹n* instead of *Hérmelin*), **lùthérisch* (used only in a dogmatical sense; by the side of *lúthèrisch*) is due to the influence of *Libélle*, *Tabélle* — *Coulisse* — *Báldachin*, *Páladin* — *homérisch*, *hystérisch* (lat. *luthéricus*). Partly, however, the deviations are to be explained from a **physiological point of view**, viz. in those cases where the principal stress would fall on a relatively light syllable and the secondary stress on a relatively heavy one: **Wächhólder*, **Hólúnder*, **Schârmützel*, **schmârótzen*, **éléndig* (*è¹lé²ndi²h¹*, derived from *élènd* *è¹lé²nft*), **lèbéndig* (*lèbè²ndi²h¹*, derived from *lèbend*, instead of the older *lèbèndig*); so also in the derivatives **schârwénzeln* or **schèrwénzeln* (to cringe and fawn); cf. also § 100, 2, 3, 4.

In some cases **other reasons** have produced the transference of the accents; so especially in adjectives which are derived from compounds: **àbschéulich* (from *'Abschèn*), **bùchstâblich* (from *Bùchstâbe*), **vòrzùglich* (from *Vòrzùg*), **gègenwârtig* (from *Gègenwârt*), **miszbrâuchlich* (from *Miszbrâuch*), **etwâig* (from *étwâ*); and also the following adjectives, which, however, in emphasis can retain their original accentuation: **wâhrháftig*, **lèibháftig*, **tèilhâftig* (by the side of *wâhrháft*, *lèibháft*, *tèilhâft*), **âugenblicklich* (from *'Augenblick*), **ùrsprùnglich* (from

'Ursprung), *eigentümlich (from 'Eigentum), *absichtlich (from 'Absicht), *währschéinlich, *öffénbár.

96. A transference of the principal stress from the root-syllable of a German word to the foreign suffix takes place, if the suffix in the language from which it is borrowed has the accent: -age (Stèlláge *ʃtɛ²lɔ²ʒə¹*, Tàkeláge *tʰɔ²kɛ²lɔ²ʒə¹*; -ant (Pàukánt, Lieferránt); -alien (Làppálién); -ist (Hòrníst, Hàrfeníst); -ieren (hálbieren, stòlzíeren); -ei (Drücke-
The principal stress on foreign suffixes of German words.
 ròi, Dròstèi); -aner (Wèimaráner, Wàgnériáner); -enser (Bádénser, Jénénser); -ur (Glàsúr *glɔ²zú¹r*); -os (bùrschikós *bù²ʀʃi²kʰó¹ʃ*); -ier (Kneipier *kɛ²p¹i²ɛ¹*, Rentier *rɛ²nti²ɛ¹*). Notice also Klèinódien, beside the German form Klèinòde.

Only *Schléndrián and *Gróbián are excepted, and the formations (originally juxtapositions; cf. § 113) with -lei, as dréierlèi, víelerlèi, éinerlèi (but this word is accentuated èinerlèi, if it means "indifferent").

Hybrid formations in which a German ending is added to a foreign word are treated in connexion with the accentuation of the loan-words; cf. § 120.

97. From the accentuation of derived words the accentuation of **compounds** is to be separated, although the distinction between them is often not easy, because some original compounds have the appearance of derivatives, e. g. Júnker (← Júngèrr). For practical reasons it is convenient to regard a word as no longer compound, if the second part of it has ceased to appear as an independent word (as e. g. Schön-
Principal stress in compounds, in derivatives from compounds, and in juxtapositions.
 heit, Rittertum, fruchtbar; cf § 83).

Also **derivatives from compounds** must not be treated as compounds; e. g. hándháben is no compound, consisting of Hand+haben, but is derived from the nominal compound Hándhábe; in the same manner 'Unterschéidung is no compound, consisting of unter+Seheidung, but is derived from the verbal compound ùnterschéiden.

Furthermore we must carefully distinguish between a **compound** (*Zusammensetzung*) of two parts, the first of which is the pure uninflected stem, and a **juxtaposition** (*Zusammenrückung*) of inflected words, like Vergíszmèin-

nicht, 'Allerséelentåg. A juxtaposition can consist of any number of elements; but a compound contains two, which, however, on their part can consist of compounds. E. g. Nórd-sëeschifffährt is not compounded of Nord + See + Schiff + Fahrt, but of Nórdsëe + Schifffährt.

Note. Only a copulative compound (**dwandwam**) can consist of more than two coordinate parts, e. g. schwärz-wëisrót, cf. § 101, 5.

In a **compound** only one syllable keeps its principal stress; the other syllables subordinate their accents as secondary stresses: Nórdsëeschifffährt; cf. § 91, 7. (Very few compounds can have two principal stresses, cf. §§ 92. 100, 6. 101, 4, 5. 104. 105.)

Derivatives from compounds retain the accent of the compound: 'Unterschëidung like ùnterschëiden, hánd-hàben like Hándhàbe (a few exceptions in § 95).

Juxtapositions have the sentence-stress throughout, e. g. Vergísmëinnicht; cf. § 110.

98. The fundamental law for the position of the principal stress in compounds is:

Compounds the second part of which is a **nomen** i. e. noun, adjective, adjective-adverb, or numeral (**nominal compounds**) have the principal stress on the first part. Compounds the second part of which is a **verbum** (**verbal compounds**) have the principal stress on the second part.

E. g. Dúrchstich — dùrchstéche; Miszgünst — miszgö'nné; 'Unterschied — ùnterschëide; Wídersprúch — wíderspréche; 'Urlaub — erláube (be-úrlàube, Erláubnis are derivatives); úngèrn; dréizèhn.

This law, originating from Primitive Teutonic times, is often disturbed by analogy, as the verbal and nominal compounds influence each other; cf. §§ 102. 107. 109. Some words, like *ùnterrichte (which is derived from 'Unterricht, and therefore ought to have the same accentuation as the noun), and the infinitive *míszfàllen (which was identical with the noun das *Míszfàllen) are especially remarkable.

99. The nominal compounds consisting of nomen + nomen in general observe the old law; e. g. Háusvàter, Grószvàter, rósenrót, áltkług. The idea of this accentuation is,

to give the principal stress to the qualifying word, the secondary stress to the qualified word. The exceptions to this rule are to be treated in two divisions: 1) *nòmen+nóun*; 2) *nòmen+ádjéctive*.

100. If the first part is a *nòmen* and the second a *nóun*, the principal accent lies on the second part in the following cases (partly arisen from old juxtapositions):

1) In **certain geographical names** compounded with *-hafen*, *-haven* (*Brèmerháfen*, *Cùxháven*), *-münde* (*Wàrnemünde*), *-hausen* (*Sàchsenháusen*), *-walde* (*Rü'genwàlde*), *-holm* (*Stöckhólm*), *-felden* (*Rhèinfèlden*), *-dam* (*Amsterdám*, *Rötterdám*), *-sund* (*Stràlsúnd*), *-wört* (*Dòñàuwört*), *-werder* (*Marienwérder*), *-hagen* (*Kòpenhágen*), *-brunn*, *-bronn*, *-born* (*Schö'nbrúnn*, *Hèilbrónn*, *Pàderbórn*), *-lautern* (*Kàiserslàutern*), *-see* (*Wèizensée*), *-förde* (*Eckernförde*), *-rent* (*Bàirént*), *-rode*, *-roda* (*Osterróde*, *Friedrichródà*), *-ruh(e)* (*Friedrichsrùh*, *Kàrlsrùhe*), *-grätz* (*Kö'niggrätz*).

2) In **geographical names** the first part of which is *alt*, *neu*, *grosz*, *klein*, *Nord*, *Süd*, *Ost*, *West*; e. g. *'Alt-ènglànd*, *Nènfündlànd*, *Gròszbritànnien*, *Klèinàsien*, *Nòrdamèrikà*, *Sü'dfrànkrièch*, *Wèstfàlen*, *'Ostindien*, *Sü'dóst*, *Nòrdwèst*.

But there are some words which adhere to the old rule, e. g. *Nórddèutschlànd*, *Südschwèiz*, *'Ostprèuszen*, *Wèstprèuszen*. The principal stress always remains on the first part, if a contrast is to be expressed between two compounds having an identical second part: *Nòrdamèrikà*, *nicht Südamèrikà*.

3) In **certain expressions of time**: *Pàlmsónnlàg*, *'Ostersónnlàg*, *Pfingstmónnlàg*, *Blàumónnlàg* (but *Rósenmónnlàg*), *'Aschermittwòch*, *Grü'ndónnèrstlàg*, *Kàrfrèitlàg* (but *Kàrwòche*), *Fròhnléiehnàm*. (*Jàhrhúndert* and other words with *Jahr* are mentioned under juxtapositions § 111.)

In those names where the second part consists of a compound, rhythmic-physiological tendencies have made themselves felt: *Pàlmsónnlàg* has become *Pàlmsónnlàg* and so an alternation between weak and strong stresses was obtained.

4) In **some titles**, in which partly the same explanation

is applicable, such as Schlöszhauptmänn, Krèishauptmänn, Fèldmárschäll; e. g. Schlöszhauptmänn has become Schlöszhauptmänn.

But also in compounds with ober: 'Oberámtmänn, 'Oberförstmèister, 'Oberstléutnànt; the old rule is observed in *Oberlèhrer, *Oberlèutnànt, and especially in those words which can be combined with unter also: 'Oberpfàrrer — 'Unterpfàrrer.

5) In **Old-Teutonic** names, especially if they contain three or more syllables, the Latin accentuation was customary; e. g. 'Alemánne, Lángobárdén, Vándálen, Wálhállà, Wálkü're, Brúnhilde, Gèrtrúde, Kúnigúnde (but without e: Brúnhild, Gèrtrúd, Kúnigúnd). Now the general trend is to restore the genuine Teutonic accentuation: therefore Lángobárdén, Vándálen, Wálhállà, Wálkü're etc.

6) In compounds, such as Bàselstádt, Kőnig'ín-múttér, as well as in modern **copulative compounds**, e. g. Schlèswig-Hólstèin, Hèssen-Nássau, Östrèich-'Ungàrn, where the secondary stress comes very near in force to the principal stress, there appear sometimes really two principal stresses; cf. §§ 101, 4, 5. 104. 105. Words with this **level stress** (**schwebende Betonung**) are pronounced with a pause between the two stressed parts; e. g. the emphatic exclamation das ist | búch-|stä'blich | wáhr instead of the usual búchstä'blich.

7) In **isolated words**, such as *Schlàráffe, *Pfèffermínze. In *Hèrzliebèchen, *Hèrzliebster the change of the stresses is due to the fact that here Herz does not qualify, but only strengthens (cf. § 101, 4). In *Allgüte, *Allgègenwàrt, *Allwíssenhèit, *Allménde we have again to recognise the effect of the physiological-rhythmic factor.

101. In the group **nómen+ádjective** a change to **nòmen+ádjective** has been carried out in:

1) Adjectives compounded with the intensive **all**; e. g. àllmä'hlich, àlléin, àllgeméin, àlltä'glich, àllmä'chtig (whilst the nouns, with few exceptions, cf. § 100, 7, have the principal stress on all, e. g. 'Allmächt). Exceptions are *àllsèitig (here all is qualifying, not strengthening) and *àllgemäch; álbern (← O. H. G. ála-wā'ri) is not felt any longer as compound.

2) **Isolated words**: the four participles *willkómmen,

*vòllkómmen, *lèibéigen, *hèrzéigen (cf. § 109); *bàrmhèrzig, *drèiéinig, *drèifáltig (if it means “triune”; but drèifáltig = threefold). ‘Augenblicklich, èigentümlich are no compounds, but derivatives; cf. § 95.

3) Certain compounds with *alt*, such as *áltíndisch*, *áltpérsisch*, *áltsächsisch*, *álnórdisch* etc., if the name of the language or nation itself, and not a certain period is to be indicated; in the latter case the regular accentuation is maintained; e. g. *áltíndisch* forms a contrast to *áltpérsisch*, *áltgriechisch* etc. but *áltindisch* to *néuindisch*.

*Althòchdèutsch and *áltfränkisch (= obsolete) have always the principal stress on *alt*.

4) Adjectives compounded with a noun or adjective which does not qualify the meaning of the second part but only strengthens it. E. g. *blútárm* (very poor, but *blútárm* anaemic) *stéinréich* (very rich, but *stéinréich* stony), *pèchschwärz*, *stóckdúmm*, *mènschenmöglich*, *gründhäslich*, *mäusetót*, *krèuzbráv*, *spötttschlécht*, *fèderléicht*, *sònnenklár*, *blitzbláu*, *knállrót*; *bitterkált*, *hòchféin*, *wildfrémd*, *wòhlwéise*, *gròszmächtig* etc. In these compounds, however, the secondary stress, which is here very strong, can become so reinforced, that we obtain a level accentuation (cf. § 100, 6): *stéinréich*, *stóckdúmm*. If a termination is added to compounds of this sort, either the level accentuation remains: *ein blútármes Kind* (only = a very poor child), or the first part receives the principal stress, the second part the secondary stress: *ein blútármes Kind*, which accordingly can mean either a very poor child or an anaemic child.

5) In the same manner are treated the **copulative compounds**; e. g. *schwärzwéisz* or *schwärzwéisz* (black and white), *schwärzwéiszrót* or *schwärzwéiszrót*, *dèutschfränzö’sisch* or *déutschfränzö’sisch*.

Note. In the names of colours we have to distinguish between the copulative compounds (e. g. *rótwéisz* or *rótwéisz* = red and white) and the compounds with a first intensifying part (e. g. *knállrót* or *knállrót* = fiery red) on one side, and on the other side the compounds the first parts of which indicate a special shade (e. g. *rótwéisz* = reddish white, *gráubláu* greyish blue, *himmelbláu* blue like the sky).

The compounds with *hell* or *licht* and *dunkel* are accented like the intensive compounds (e. g. *hèllbláu* or *hèllbláu*), unless the contrast between *hell* and *dunkel* is to be emphasised; in which case the original accentuation appears *hèllbláu*, *nicht dúnkelbláu*.

102. The number of the compounds consisting of a **prefix** and a **nomen** which observe the old rule (such as 'Antwòrt, 'Urtèil, 'Ursprung, Míszbráuch, Míszwàchs) has been considerably limited by the fact that by the influence of the verbs the prefixes appear in their reduced state (e. g. *ent-* instead of *ant-*, *er-* instead of *ur-* etc.) and the verbal accentuation has been introduced. This is the case with the compounds containing the prefixes *be-*, *ge-*, *ent-* (*emp-*), *er-*, *ver-*, *zer-*; e. g. *Begínn*, *Bestánd* (but *Béistánd*), *Betrág* (but *Béitrág*), *Gebót*, *Entsátz*, *Empfáng*, *Erlász*, *Verdácht*, *Zerfáll*. (Nouns which are positively or analogically derived from verbal compounds, like *Begínn*, *Erlássung*, must not be taken into account here.)

The influence of the verb is also to be seen in the accentuation of **participles** and **infinitives** containing in their first part a prefix, for both are nominal, not verbal formations, as they are declined, not conjugated. There are only very few participles combined with a prefix which have retained the nominal accentuation: **úntertàn* (but *úntergében*; both = subject, dependent). A few others in §§ 106, I 4, II 2; cf. also §§ 103. 107, 3. 109.

For other reasons some isolated adjectives have transferred their principal accent to the second part: **àbsónderlich*, **vòrtréfflich*, **hínlä'nglich*, **àusfúhrlich*, **àusgezéichnet* (excellent, but *àusgezéichnet* = marked out), **àuszerórdentlich* (= extraordinary, uncommon; but *àuszerórdentlicher Professor* = Reader). ' *Absíchtlich*, *gègenwärtig* etc. are not compounds, but derivatives; cf. § 95.

103. The nominal compounds with **misz-** have observed the rule, e. g. *Míszbráuch*, *Míszgünst*, *Míszmüt*, *Míszbíldüng* etc.; *Míszhándlüng* is a derivative from *Mísz+* *nomen*. *miszhánde*. The part. and infin. follow the accentuation of the verb: *miszbráuchen*, *miszbráuht* etc.; words, like *miszgelàunt*, *miszgeàrtet*, *miszgeàchtet*,

miszgestaltet are, however, not to be regarded as participles of miszláune (which does not exist), miszáрте, miszáchte, miszgestálte, but are combinations of misz- and independent words, like übel-geláunt, übel-geártet, wóhlgestaltet, hóch-geáchtet.

104. The nouns compounded with **ur-** and their derivatives have the principal stress upon ur-; e. g. 'Urtèil, 'Ursprung, 'Ursàche, 'Urkúnde; *úrsächlich, *úrkúndlich. Likewise the adjective *úrbàr. For the derivative **Ur+nomen**.
tíve *úrsprúnglich cf. § 95.

All the other adjectives with **ur-** show precisely the same accentuation and peculiarities as the adjectives with an intensifying first part, like blútárm: úrált or úrált, úrdéutsch or úrdéutsch; but der úrálte Baum or der úrálte Baum. Cf. § 101, 4.

105. The foreign prefix **erz-** (from the Greek archi-) has the secondary stress in compounds with an offensive meaning: 'Erzshúrke, 'Erzbetrúger, èrzgrób, **Erz+nomen**. èrzfául etc. The words can also be pronounced with a level stress, as the secondary stress is here very strong, and the adjectives are treated quite as blútárm, cf. § 101, 4.

In compounds with good meanings and especially in titles **erz-** has the principal stress: 'Erzèngel, 'Erzbischöf, 'Erzhèrzögg etc. In 'Erzgebirge ist Erz a noun (= ore).

106. I. The prefix **un-** has the principal stress:

1) If the second part is a **noun**: 'Unmènsch, 'Untiefe; 'Unnatúr, 'Ungefáhr (chance), 'Ungehèuer (monster) etc.

2) If the second part is an **adjective or Un+nomen**.
adverb not derived from a verb: úngèrn, úndéutsch, úntrèn, únмäszig, únfrèundlich, únvòrteilháft, únverständlich, únsichtbàr (invisible, from Sicht) etc.

Exceptions: *únéndlich, *úngeméin, *únwillkürlich, *únmíttelbàr, *únverzúglich, *únéingedènk, *úngefáhr (approximately), *úngehèuer, *únménischlich (enormous).

3) If the second part is an **adjective derived from a verb** with the suffix **-lich** or **-sam** and has an **active meaning**: únziemlich, únerfrèulich, únwerksàm, únfólgsàm etc.

Exceptions: *únstérblich, *únàufhörlich.

4) If the second part is a **present participle**: *únwissend, unbefriedigènd, úngenü'gend* etc.

II. The prefix **un-** has the secondary stress:

1) If the second part is an **adjective derived from a verb** with the suffix **-lich, -bar, -ig, -sam, -haft** and has a **passive meaning**: *úberéchenbàr, únlésbàr, únnàhbàr, únsichtbàr* (from *sichten* to sift), *únságbàr, únsä'glich, únverzéhlich, únentg'éltlich, únzählig, úntádlig, únzwéifelháft, únaufháłtsám*; and with an active meaning **únféhlbàr*.

Exceptions, as *únbràuchbàr, úndéutlich, únü'blich, únkénntlich, únbä'ndig* (but as adverb in colloquial speech *únbä'ndig* = excessively, awfully) are treated after 13. Besides, it must be noted that the compounds of this group show a general tendency to shift their accents, when an ending is added, e. g. *ein ún-lésbàres Buch*.

2) If the second part contains a **passive participle**: *únbekléidet, úngelógen, unbefriedigt, únentwégt, únverséhens* etc.

Here we have many **exceptions**. In general, these participles too show the tendency to place the chief stress on **un-**, if an ending is added, e. g. *únbefriedigter Ehrgeiz*.

In many cases the second part is no longer felt as a participle, but as an adjective, as e. g. *únbesónnen, únbéliebt, únbekánnnt, únbelèsen, únentschlóssen, úngelègen*, because *besonnen* means prudent, *beliebt* popular, *bekannt* well known, *belesen* well read, learned, *entschlóssen* resolute, *gelegen* convenient; other cases are *únbehólfen, únbeschàdet*

In general, we can say, if a participle is detached from the living verbal forms, either by its form or by a peculiar development of its meaning, it is regarded as a mere adjective and has therefore the principal stress on **un-**;

e. g. *úngeáchtètet* (not respected), but *úngeáchtètet* (not-withstanding);

úngestàłtet (not shaped), but *úngestàłt* (ill shaped);

úngéhàłten (not held), but *úngéhàłten* (indignant);

úngezwúngen (not forced), but *úngezwúngen* (un-affected);

úngeráten (unguessed), but úngeràten (degenerated);
 úngèbildet (not formed), but úngèbildet (uneducated);
 úngeréimt (unrhymed), but úngerèimt (absurd).

Note. Spoken in excitement, **un-** can assume the principal stress in any case, e. g. únverzèihlich.

107. The verbal compounds are throughout faithful to the old law and show the principal stress on the second part: Míszgünst — miszgönne, 'Únterhàlt — únterhálte, Wídersprúch — wídersprèche, Dúrchstích — dúrchstéche, 'Überschlàg — über-
Verbal compounds in general.
 schlàge etc. This rule is violated only in appearance, for we have to discard:

1) All the verbs derived from nominal compounds, like úrtèile (from 'Urtèil), ántwòrte (from 'Antwòrt), wállfàhrte (from Wállfàhrt), frúhstüeke (from Frúhstüek), wéissàge (from the O. H. G. simple word wízzago prophet). Some of them betray themselves as derivatives at once by their weak conjugation, e. g. héirate, rátschlàge, rádebrèche, hándhábe (imperf. hándhábte).

2) All the juxtapositions, which are distinguished from the verbal compounds by the fact that in certain forms the first part is separated from the verb, e. g. téilnèhmen, státtfinden, áchtgèben, tótschlàgen, wáhrsàgen, and all the sham compounds with prepositions, or rather adverbs. That áussprèchen, ánsàgen, vórführen etc. are written as single words is quite conventional and of recent origin, for both parts are perfectly independent words and show the sentence-stress, not the word-stress; and áussprèchen, ích sprèche áus is entirely equivalent to a verb with any adverb, e. g. schnéll sprèchen, ích sprèche schnéll.

3) All the compounds the second part of which is a participle, e. g. frúchtbríngend, wónnetrúnken, for a participle is a nominal, not a verbal form; but nearly all the participles with a prefix have been attracted by the verbs and show their accentuation, cf. § 102.

108. The compounds with **be-**, **ge-**, **ent-** (emp-), **er-**, **ver-**, **zer-** have always the principal stress on the verbal element, without even any apparent exception, e. g. be-
Prefix+verb.
 géhn, vergéhn, ergéhn, zergéhn, entgéhn etc.
 The principal stress rests also on the second part in the com-

pounds with **durch-** (durchreisen to traverse), **über-** (übersetzen to translate), **um-** (umstellen to surround), **hinter-** (hintertreiben to thwart), **unter-** (unterzeichnen to sign), **wider-** (widerlegen to confute), spelt with ie only in wiederholen (to repeat) and in wiederherstellen (to restitute).

(Durchreisen to pass through, übersetzen to ferry, umstellen to transpose, hintertreiben to drive behind, unterzeichnen to draw under, widerlegen to lay again are no compounds, but juxtapositions, which mostly retain the original concrete meaning; cf. § 107, 2.)

The compounds with **misz** observe the rule in general, e. g. miszhändigen, miszächten, miszärten, miszräten; but misztun and miszwollen are probably analogical formations after the juxtapositions wóhltun, wóhlwollen. The principal stress lies on misz- in those verbs which are already compounded with an inseparable prefix; e. g. miszbehängen, miszgefallen (better is miszfällen), miszverstehen, miszgebären. For the participles miszgeachtet and miszgeartet, by the side of the more usual miszächtet and miszärtet, cf. § 103.

109. Nomina as first parts of verbal compounds do not very often appear; the principal stress is generally on the verb, Nomen+
verb. as in vóllbringen, vóllfüllen (to fulfill), vóllführen, vóllenden, vóllziehn, vóllstrécken, willfáhren; vóllkómmen and willkómmen are old participles and can also assume the nominal accentuation: vóllkómmen, willkómmen (cf. § 101, 2). (Vóllfüllen to fill full, vóllschreiben and other words with the principal stress on voll are juxtapositions.)

Lustwándeln, fróhlócken (a popular etymology, possibly a derivative from a compound noun vróleich, song of rejoicing), lóbsingen, lóbpreisen have mostly the verbal accentuation; but liebkósen and liebäugeln prefer the principal stress on the first part.

110. Whilst in most compounds the first part originally represents the pure stem without any termination, and the compounds go back to old times or are at least Juxtapositions
have sentence-
stress formed after old models, the comparatively young **juxtapositions or conglomerations (Zusammenrückungen)** consist of the inflected words of a sentence and

retain the sentence-stress, as they have arisen from syntactical phrases. E. g. Vergíszmèinnicht has about the same accentuation as verlász mĕch nicht, Lèbewóhl as schláfe wóhl, Hãswúrst as Hãns Sãchs, 'Aller-séelentãg as àller Frénden 'Ende, áusfãhren as schnéll fãhren, der Hòhepriester as der gròsze Kóinig, 'Ein-maléins as drèi mal fãnf, Gòttseibéiuns (Old Nick) as blèibe béi uns, vòrderhãnd as vòr der Tŭr.

111. Bimembral juxtapositions have, as a rule, the principal stress on the second part; but in verbal bimembral juxtapositions the principal stress rests on the adverbial element, which usually forms the first part of the juxtaposition. E. g. Långewéile, Gòtt-lób, Vãterũser, Hòhenzòllern (dat. plur.), Vierteljãhr, Jãhrhũndert and Jãhrtãusend (Jahr is here the old nom. plur. or perhaps a mutilated partitive gen. plur.), Siebenbũrgen, ànderthãlb, àlleròrten, àbhãnden, bèisèite, zũfrieden, vòrhãnden, stròmãb, bèrgãn, àllerliebste, fũrwãhr, zũgũte, ins-geméin, linksũm, viellèicht, zũnãchst, òbglèich, tròtz-dẽm, àlsdãnn, wóhlãn, hìnãuf etc.

Bimembral juxtapositions have the principal stress on the second part; verbal ones on the adverbial element.

'Abfãhren (like rãsch fãhren), stãttffinden (like glèich finden), and so in a huge number of examples. Verbal juxtapositions with the adverbial element in the second place are rare: Lèbewóhl, Lèbehóch (cf. lèbe glũcklich).

112. There are a few verbal juxtapositions, which have the principal stress on the verb and therefore deviate from the accentuation of the sentence: *Tãugenichts (good-for-nothing, accentuated as sentence tãuge nichts), *Tũnichtgũt (never-do-well, as sentence tũ nĕcht gũt), *Stèlldichèin (appointment, as sentence stèll dich èin), *Rũhrmichnĕchtãn (touch-me-not, as sentence rũhr mich nichtãn), *Lũginslãnd (watch tower, as sentence lũg ins Lãnd), *Springinsfèld (harum searum), *Sãufãus (drunkard), *Pãckãn (bobby; large dog), *Lèberècht.

Verbal juxtapositions with the principal stress on the verb.

113. Of juxtapositions containing a nomen as second part there exist a number which have the principal stress on the first, and the secondary stress on the second part: ending in -seit, -seits (éinersèits, jẽn-sèit(s), diessèit(s), àbsèits); in -teils (éines-

Nominal juxtapositions with a secondary stress on the last part.

tèils, méistentèils, but also mèistentèils, méinestèils); in -halb (dèshàlb, áuszerhàlb); in -zeit (dèrzèit, jèderzèit or jèderzéit); in -hand (réchterhànd, àllerhànd or àllerrhànd); in -mal, -mals, -malen (dréimàl, jèdesmàl, éhemàls, náchmàls, dérmmàlen); in -rücks (hínterrü'cks). The juxtapositions ending in -halben, -halber, -halb, -willen, -weise, -dings, -art, -maszen, -gestalt, -wegen have the principal stress on the first part, if this is emphatic or contains a noun: e. g. béispielswèise, órðnungshálber, méinetwègen (in the contrast to déinetwègen), dèshàlb, déràrt, dérmmàszen, dérgestàlt. But the principal stress rests on the second part, if an adjective or unemphatic pronoun precedes: e. g. glèicherwèise, èinigermàszen, àllerdíngs, mèinetwègen, mèinethálben, dèshàlb, wèshàlb etc. For juxtapositions containing the petrified foreign noun -lei cf. § 96.

In general we can say that the principal stress is especially prone to rest on the first part, if the word is spoken with emphasis; e. g. éinmàl (forming the contrast to méhreremàl) but einmàl, as in es war einmal (ə'nmāʔl) ein König; àllerhànd emphatic, but àllerhànd unemphatic.

In addition to these categories we have some isolated nominal juxtapositions with the principal stress on the first part *vórlieb, *fàrlieb (but also fùrlieb), *Hérrgòtt, *víertel, (← vierte Teil), *Míttèrnàcht (← M. H. G. ze mitter naht), *Wéihnàchten (← M. H. G. ze wihen nah-ten), *Míttàg (← mitte Tag), Hálbmònd, Hálbjàhr, Hálbbrüder.

114. Juxtapositions containing a numeral as last part have the principal stress on it; e. g. Jàhrtàusend, Jàhrhúndert, Jàhrzéhnt, sèlbzwölft, sèlbànder, drèiàchtel, vierunddréiszig, siebentàusend, drèihúndertfünfundséchzig. But there is a tendency to retract the principal stress, if they are used as attributives, e. g. vierunddréiszig Mark, siebentàusend Mann, drèihúndertfünfundséchzig Tage.

Juxtapositions
with numerals
as last part.

Note. The numbers from dréizèhn to néunzèhn and the tens, such as zwánzig, dréiszig, vierzig etc. are real old nominal compounds and have therefore always their principal stress on the first part; as the latter numbers are

not any longer felt as compounds, they have lost their secondary stress.

115. Pronouns, as last parts of juxtapositions, have either the principal stress, as *èinànder*, *dèrsélbe*, *dèrsélbigé*, or the secondary stress, as *dérjènige*, *jédermànn*, *jémànd*, *níemànd*, *jédwèder* (or *jédwéder*). Juxtapositions with pronouns as last part. Pronomina governed by a preposition have the principal stress, e. g. *ùnterdés*, *ùberdies*, *tròtzdém*, *dùrchèinànder*, *indém*, although occasionally in strong emphasis the principal stress can be retracted.

116. The overwhelming majority of juxtapositions which contain an indeclinable word as second part have throughout the principal accent on it. E. g. *bèrgàb*, *vòrbéi*, *zwèifelsóhne*, *bèinàhe*, *dèmnàch*, *bishér*, *sòfórt*, *àlsbàld*, *òbschón*, *gègenüber*, *hìn-àus*, *glèichwóhl* etc. Juxtapositions with indeclinabilia as last part.

Exceptions are: **ébensò*, **àlsò*, **állzù*, **úmsò*, **déstò*, **gléiehsàm*, **dènnòch*, **fùrbàsz*, **ùbermòrgen*, **vòrgèstern*, and the juxtapositions with *sonst* and *anders* as first parts, e. g. *sónstwò*, *ánderswò*.

The juxtapositions with *hin* as last part vary (e. g. *fèrnerhìn*, *lètztthìn* or *fèrnerhín*, *lètztthín*).

Juxtapositions the first part of which contains *da*, *hier*, *wo* or a pronoun retract the principal stress, if they are emphatic (as is occasionally the case also with other juxtapositions, e. g. *bèinàhe* instead of the ordinary *bèinàhe*): *dàmit* (with that), *dàhìn* (to that place), *híermít*, *wòvòn*, *dèmnàch* etc. are the forms used in strong emphasis for the ordinary *dàmit* (with it, in order to), *dàhìn* (thither), *híermít*, *wòvòn*, *dèmnàch* etc.

117. **Loan-words** or **foreign words** (**Lehnwörter**, **Fremdwörter**) either adapt themselves to the German accentuation or keep the foreign accent.

In accordance with German usage, i. e. on the first syllable, are accentuated those foreign words which found reception already in the O. H. G. period and are quite germanised as to their form (**loan-words**); e. g. *Münster* (monastérium), *Münze* (monéta), *Kéller* (cellárium), *Kirche* (kyriaké), *prédigen* (praedicáre), *'Abentèuer* (ad-ventúra). Foreign words with retracted accent.

In the real **foreign words**, which have maintained their original form more faithfully, it is comparatively seldom that a retraction of the principal accent takes place; so e. g. grammatical terms, such as 'Adjectiv, Súbstāntiv, Nómīnativ, Singulār, Plúrāl, Pássiv, Plúsquamperfèctum, 'Imperfèkt etc. (but always Futúrum); Fébruàr, Jánnàr, 'Oriènt, 'Occidènt.

Some vary: 'Objèkt and Objékt, Súbjèkt and Subjékt (always Subjékt, if it is = scamp); 'Infanterie, 'Artillerie, Cávallerie besides 'Infanterie etc. Palást (sometimes Pálàst); Panier (bannière; but more germanised Bänner, Low Latin banerium).

In foreign proper nouns the accent is often retracted: Móritz (Maurítius), Níkolàns, Kónstantin, 'Augúst (= Augústus; but Augúst = name of the month).

118. The overwhelming bulk of foreign words which found reception in the language mostly only in N. H. G. times in general keep the accent which they possessed in that language from which the German language has borrowed them — not that accent which they had in the language to which they originally belonged; therefore e. g. Pàrādmà, 'Alexánder, not Parádeigmà, Aléxandròs, as Greek words have been introduced into German chiefly through the instrumentality of Latin.

Latin words have been borrowed by the German language **either** directly, therefore e. g. geniál $gè^1nì^2\acute{a}l$ (geniális), Státuè $\acute{s}tá^2t\grave{u}^1\grave{e}^1$ (státua), Lógik $ló^1gì^2k$ (latinised lógica, Greek logiké); **or** through the instrumentality of the newer Romance languages, especially French, therefore e. g. Genie $\acute{z}è^1nì^1$ (génie), Statúe $\acute{s}tá^2t\grave{h}\acute{u}^1$ (statue), Musik $m\grave{u}^1zì^1k$ (musique ← Latin música ← Greek mousiké).

The compound foreign words too keep their foreign accent, e. g. Sùbscription, Chrònométer, 'Architékt, pèrmanént, Parábel.

Comparatively few foreign compounds exist in which an ordinary speaker is conscious of their individual elements, and which in consequence are treated like the German nominal compounds. (Verbal compounds are out of the question, as practically all the foreign verbs end in -ieren.) E. g. Premièrlèutnànt, Còntreàdmirál, Cónrèctòr, 'Archì-

diákonüs (cf. German Gégenkö'nig, Mitschü'ler etc.); in the same way the compounds with the privative in- (im-, il-), such as indirèct, impèrsonàl, illègetim (cf. Germ. ún-gèrn, úngesètztlich etc.); on the other hand intáct, as an adjective tact does not exist and an ordinary speaker has no consciousness of the fact that the word is a compound.

119. The following list for the accentuation of the most common foreign words differs in some respects from that given by Hempl. Following his example, I have arranged the ends — not the terminations or suffixes — of the words in their alphabetical order, without regard to their etymology — the only convenient form, in view of the extremely various formations of the foreign words, belonging, as they do, to the most different languages.

The principal
ends of foreign
words and their
accentuation.

- ade -á²dǎ¹: Balláde, Chòkoláde.
- age -á²žǎ¹: Pàsságe, Dràináge.
- ai -á²ǵ²: Lakái.
- aise -é²zǎ¹: Angláise, Màrseilláise.
- al á²l: Locál, Morál, Gènerál, vèrticál, fatál, cen-
trál, finál, feudál.
-à²l: *Plúrál.
-à²l: *Kárnevál, *Pórtugál.
- ale -á²lǎ¹: Spirále, Sandále, Finále, Unciále.
- all -á²l: Metáll, Kristáll; but *Márscháll and *Séne-
scháll are German words.
- alle -á²lǎ¹: Korálle.
- am -à²m: Bálsàm, Bísàm.
- an -á²n: humán, Orgán, Merán, Titán, spontán.
-à²n: *Oceàn, *Páviàn, *Sátàn, *Súltàn, *Divàn,
*Chárlatàn, *Christiàn.
- än -é²n: Kàpitá'n.
- ance -ǵ²s: Alliánce, Distánce.
- ande -á²ndǎ¹: Guirlánde.
- ane -á²nǎ¹: Chikáne, Kàrawáne, Membráne.
- äne -é²nǎ¹: Fontäne, Domäne.
- aner -á²nǵ: Spàrtáner, Primáner, 'Indiáner, Lùtheráner.
- ann -á²n: Tyránn.
- ant -á²nt: èlegánt, Diamánt, Èlefánt, vakánt, prä-
gnánt, àmüsánt.

	-à ² nɪ: *Cónsonànt, *Léutnànt, *Démànt.
	-ǎ ² : Rèstaurànt, Èlegànt.
-anz	-á ² nɪʃ: Substànz, Instànz, Vakànz, 'Arrogànz.
	-à ² nɪʃ: *Fírlefànz, *Pópànz.
-anze	-á ² nɪʃə ¹ : Románze.
-aph	-ǎ ² f: Phòthogràph.
	-a ² f: *Séràph.
-ar	-ǎ ² r: Barbár, Husár, Altár, Vikár.
	-ǎ ² r: *Jánuàr, *Fébruàr, *Sìngulàr.
	-ǎ ² r: *Néktàr, *Káviàr, *'Altàr (and Altár).
-är	-ǎ ² r: pòpulär, vulgär, Militär.
-ard	-á ² rɪ: Lèopárd, Sàvoyárd, Hazárd.
	-à ² rɪ: *Bástàrd, *Billiàrd.
-arde	-á ² rdə ¹ : Mansárde.
-as, -asz	-a ² ʃ: 'Atlas, Kómpasz, Kúrasz.
-asse	-á ² ʃə ¹ : Grimásse, Terrásse.
-ast	-á ² ʃt: Kontrást, Palást, Phantást.
	-a ² ʃt: *Dámast; *Bállàst is a Low German compound.
-at	-ǎ ² t: 'Aristokrát, Pirát, Salát, Senát, Legát, Diplomát, àccurát.
	-à ² t: *Vivàt, *Péreàt, Èuphràt.
	-ǎ ² : Etát.
-ät	-ǎ ² t: 'Univèrsitàt, Diàt.
-ate	-á ² tə ¹ : 'Asiáte, Kroáte.
-att	-á ² t: Rabàtt.
-atte	-á ² tə ¹ : Krawátte, Rabátte.
-aze	-á ² tʃə ¹ : Strapáze.
-ee	-é ¹ : Idée, Kòmitée, Livrée, Armée, Allée.
-ei	-ə ² e ² : Partéi.
-ek	-é ¹ k: Bibliothék.
-eke	-é ¹ kə ¹ : 'Apothéke.
-ekt	-é ² kɪ: Insékt, Dialékt, perfékt (adj).
	-è ² kɪ: *Pérfékt (noun), *Objékt, *Súbjékt (but also Perfékt, Objékt, Subjékt, especially if the latter means ragamuffin).
-el	-ɪ: Àrtikel, Kapítel, Matrikel, Pèrpendikel.
	-é ² l: Hotél.
	-é ¹ l: Juwél, pàrallél, fidél, Kamél.
-ell	-é ² l: Duéll, Kastéll, Flanéll, òriginéll, ideéll.

-elle	- <i>é²lə¹</i> : Kapèlle, Novèlle.
-em	- <i>é¹m</i> : Problém, Extrém, Systém. - <i>é²m</i> : *Réquiem.
-end	- <i>é²nt</i> : Dividénd. - <i>é²nt</i> : *Minuènd, *Súbtrahènd.
-ende	- <i>é²ndə¹</i> : Légènde, Dividènde.
-ene	- <i>é¹nə¹</i> : Hellène, Sirène.
-ent	- <i>é²nt</i> : Stùdènt, Accènt, intelligènt, Talènt, Präsènt, Agènt, Patènt. - <i>é²nt</i> : *Oriènt, *Occidènt, *Còntinènt, *Insolènt.
-enz	- <i>é²ntɜ</i> : Differènz, Sentènz, Florènz; but *Kób-lenz.
-er	- <i>é¹</i> : Soupér, Dinér.
-ern	- <i>é²rn</i> : mòdèrn (fashionable; mòdern <i>mó¹d₃rn</i> is "to decay."), èxtèrn, intèrn, sùbaltèrn.
-erne	- <i>é²rnə¹</i> : Zistérne.
-ese	- <i>é¹zə¹</i> : Chinése, Askése
-eser	- <i>é¹zɜ</i> : Màltésér.
-esse	- <i>é²sə¹</i> : Adrèsse, 'Interèsse.
-est	- <i>é²sɛ</i> : Protést, Attést.
-esz	- <i>é²s</i> : Excéesz, Abscéesz.
-et (-ett)	- <i>é¹t</i> : Prophét, 'Alphabét, Poét, Magnét, diskrét. - <i>é¹t</i> : óbsolèt. - <i>é²t</i> : Billét, Duètt, Budgèt (<i>bu²džé²t</i>), violètt, Ballètt, Bouquét, Bànkètt, Kadét, Bàjonètt. - <i>é¹</i> : Couplèt, Filèt.
-ete	- <i>é¹tə¹</i> : Pastète, Rakète.
-ette	- <i>é²tə¹</i> : Tòilètte, Kokètte, Ròsètte.
-eur	- <i>é¹r</i> : Gòùvernèur, Liquéur.
-ez	- <i>é¹tɜ</i> : Dùodéz, Trapéz.
-form	- <i>fó²rm</i> : ùnifórm, 'Unifórm, Chlòrofórm.
-gramm	- <i>grá²m</i> : Prográmm, Mònográmm, Kilográmm (also *Kilográmm).
-id	- <i>é¹t</i> : perfid, splèndid, Rhòmboid (<i>rò²mbo²é¹t</i>), Cèlluloid.
-ie	- <i>é²ə¹</i> : words borrowed directly from Latin: e. g. Fólie, Béstie, Grázie, Famílie, Emílie; in the same way in plural: Stùdien, Férien, Gé-

- nien, Minerálien. Greek words, borrowed through the medium of Latin, e. g. Artérie, Histórie, Xénie, Komö'die, Tragö'die (but also *Kòmödie and *Trågödie with \tilde{e}^1).
- $-\tilde{e}^1$: words borrowed from French or directly from Greek, e. g. Còurtoisie, Genie, Partie, Copié, Philosophié, 'Akademie, Mònarchie.
- ier** $-\tilde{e}^1r$: Papier, 'Offizier, Barbier, Panier, Kàvalier.
- $-\tilde{e}^2\tilde{e}^1$: *Portier, *Bànkier, *Rèntier, *Chèvalier, *Atelier, *Collier, *Metier.
- $-\tilde{e}^2\partial^1r$: chiefly in names of nations, e. g. 'Indier, Bèlgier; *Mágier.
- iere** $-\tilde{e}^2\tilde{e}^1r\partial^1$: Barrière, Portière, Première.
- ieren** $-\tilde{e}^1rn$: stùdieren, stòlzieren.
- iese** $-\tilde{e}^1z\partial^1$: Pòrtugíese.
- iser** $-\tilde{e}^1zr$: Wàlliser.
- ik** $-\tilde{e}^1k$: *Lógik, *Kómik, *Grammátik, *Chrónik, *Métrik, *Poétik, *Rhetórik, *Arsénik, *Téchnik, *Phonétik, *Mechánik, *Táktik.
- $-\tilde{e}^1k$: *Arithmetik, *Màthematik, *Kubík, *Fabrík, *Kàtholik, *Kritik, *Physik, *Musik, *Mòsaik, *Pòlitik, *Rèpublik, *Rubrik, *antik.
- ike** $-\tilde{e}^1k\partial^1$: Antike.
- il** $-\tilde{e}^1l$: Civil, Exil, Reptil.
- $-\tilde{e}^2l$: *Apríl.
- ille** $-\tilde{e}^2l\partial^1$: Flòttille.
- im** $-\tilde{e}^2m$: Pílgrim, interim.
- $-\tilde{e}^1m$: *intím, *sublím.
- in** $-\tilde{e}^1n$: Mèdizin, Disciplin, Delphín, Kamín, Ruín, Chinín; Berlin, Stettin and other names, originally Slavie, and by analogy also some German names, e. g. Böcklín ($-\tilde{e}^1n$ = diminutive suffix -lein).
- $-\tilde{e}^1n$: *Támburin, *Rósmarin.
- $-\tilde{e}^2n$: *Hárlekin; Slavie names, e. g. Púschkin.
- $-\tilde{e}^2$: Bassín, Cousin.
- ine** $-\tilde{e}^1n\partial^1$: Maschine, Cousine, Rosine, Ruine, Violíne.
- ino** $-\tilde{e}^1n\partial^1$: Kasínò.

	-i ² nò ¹ : *Dóminò.
-ion	-i ² ò ¹ n: Natió, Rèligiò, Pensió.
-ip	-i ¹ p: Prinzip.
-ire	-i ¹ rə ¹ : Satíre.
-is	-i ¹ s: *París, *Türkís. -i ² s: Adónis, grátis, Básis, Anschóvis. -i ¹ : *Logís lò ¹ z ¹ i ¹ .
-ise	-i ¹ zə ¹ : Devise, Accise.
-ismus	-i ² smu ² s: Mèchanísmus, 'Egoísmus.
-isse	-i ² sə ¹ : Coulisse, Narzisse, Prämissee.
-ist	-i ² st: Drògist, 'Idealist, Flötíst, Batíst.
-ister	-i ² stɹ: Register, Miníster.
-it	-i ¹ t: 'Appetit, Profit, Jèsuit, Bándit, 'Israelit. -i ² t: *Déficiet: -i ² t: *Sánskrit, *Prósit.
-ite	-i ¹ tə ¹ : Visíte, 'Aphrodíte.
-itz	-i ² ts: *Móritz.
-iv	-i ¹ f: Motiv, èclusiv, naiv, Archiv. -i ¹ f: in grammatical terms, e. g. Nóminativ, Rélativ, tránsitiv. -i ¹ f: áktiv, pássiv.
-ive	-i ¹ wə ¹ : Dètective, Dèfensive.
-iz	-i ¹ ts: Justiz, Hospíz, Notiz, Miliz, Bènefiz.
-ize	-i ¹ tsə ¹ : Novize.
-ment	-mè ² nt: Momént, Règimént, 'Elemént, Firmamént, Fündamént. -mè ² : *Commént, *Règlemént, *Dèpartemént.
-meter	-mè ¹ tɹ: Thèrmométer, Kilométer. -mè ¹ tɹ: *Diámètèr, *Hexámètèr, *Pentámètèr, *Trímètèr.
-og	-ò ¹ h ² : Dialóg, Kàtalóg.
-oge	-ò ¹ gə ¹ : Philológe, Sýnagóge.
-oir	-ò ² áɹ: Tròttoir, Bòudoir, Rèservoir,
-ol	-ò ¹ l: Symból, frivól, Tiról, Pistól, Idól. -ò ¹ l: *'Alkohòl (also ɹá ² l ¹ hò ¹ hò ² l).
-ole	-ò ¹ lə ² : Pistóle.
-om	-ò ¹ m: Atóm, Diplóm, Idióm, Phantóm.
-on	-ò ¹ n: Spión, Persón, Barón, Patrón. -ò ¹ n: *Bábylòn. -ò ¹ n: *Dä'mòn.

- ò²n: Greek words, e. g. Léxikòn, Epithetòn.
- o²n: Kólon, Lóndon.
- ô²: only French words, e. g. Balkón, Salón, Cantón, Waggon, Bàtaillón.
- ô²: *Cótillòn, *Pávillòn.
- one -ô¹nə¹: Kanóne, Patróne, 'Amazóne.
- or -ô¹r: Latin words: Proféssòr, Pástòr, Conditòr, Phósphòr, Sèniòr (zé¹nĭ²ô¹r).
- ô¹r: in certain Latin words by the influence of modern Romance languages: *Humór, *Rumór, *Majór, *Tenór, *Kontór, *Motór, *Tresór; the Greek *Mèteór.
- ô¹r: *Kórridòr.
- os -ô¹s: virtuós, famós, kuriós.
- o²s: Greek words, e. g. Épos, Páthos.
- ös -ô¹s: nèrvös, rèligiös.
- ose -ô¹zə¹: Frànzóse, Matróse, Virtuóse.
- ot -ô¹t: Despót, Idiót, Zelót, devót.
- ô¹: *Trieót, *Pàletót.
- ott -ô²t: bànkrott, bigótt, Kompótt, Schafótt.
- otte -ô²tə¹: Marótte, Cocótte.
- ult -ü²lt: Tumúlt.
- umph -ü²m²f: Triúmph.
- un -ü¹n: Kattún, immún, Neptún, Tribún.
- ô²: *Verdun we²rdô².
- und -ü²n²t: Vågabúnd.
- une -ü¹nə¹: Commúne, Harpúne.
- ur -ü¹r: Natúr, Kultúr, Frisúr, Pandúr, obscur.
- ü¹r: *Aúgür, *Pürpür.
- us -ü¹s: *confús, *abstrús.
- u²s: mínus, 'Usus.
- ü²s: Hábitùs, Fídibùs.
- ut -ü¹t: àbsolút, 'Institút, Rekrút, Dispút, Tribút.
- ü²t: *Lilipùt.
- yl -ü¹l: Asýl.
- yll(e) -ü²l(ə¹): Berýll, Idýll(e), Sibýlle.
- yr -ü¹r (or ü¹r): Satýr (or Sátýr).

120. If to a foreign word a German termination is added, as a rule the accentuation of the foreign word is main-

tained. E. g. Persón — persönlich, Persönlichkèit; Prinzész — Prinzéssin; Kanínchen (cuniculus), Radíeschen (French radis); Mèdizín — Mèdizíner; París — Paríser, Lóndon — Lóndonèr, Athén — Athéner.

Accentuation
of foreign
words with
German termi-
nations.

The principal exceptions are:

1) Adjectives derived from foreign words and ending in **-isch** have the principal stress on the syllable which immediately precedes **-isch** (i. e. the same accentuation as the Latin adjectives in **-icus**): therefore not only mèdizínisch (Mèdizín), semítisch (Semíte), but also mùsikálisch (Músík), àlgebráisch ('Algebrà), chàrakterístisch (Charàkter), plàtónisch (Plátò), àthérísch ('Äther), àrábisch ('Arabèr, Arábien), bàlsámisch (Bàlsàm), klimátisch (Klímà), nùmérísch (Nùmerùs), sàtánisch (Sátàn), kathólish (Kàtholík); for lùthérísch (Lúther) see § 95.

2) A retraction of the principal accent is caused in some foreign words by the addition of **-er**: Phýsikèr, Kritikèr, Músikèr, Polítikèr (Physík, Kritik, Musik, Pòlitik), Chémikèr (Chemié); likewise in the names of nations with short penult: 'Italèr (Itálién), 'Arabèr (Arábien).

3) Foreign words which have a secondary stress on **-or**, **-on**, **-ant** receive the principal one, if a syllable is added; accordingly they undergo a shifting of stress, similar to that found in Latin; e. g. Dóetòr *dó²kt^hò¹r* — Dòetóren *dò²kt^hó¹rⁿ*, Dä'mòn *dé²mó¹n* — Dä'mónen *dé²mó¹nⁿ*, Cónsonànt — Cónsonánten.

121. The stress-groups, of which a sentence is made up (cf. § 5), show a certain rhythm, even in prose. In accordance with the system of accentuation prevailing in the Teutonic languages, — viz. the use of the strongest stress on the root-syllable (§ 94) — we can perceive preeminently a falling rhythm in German; preceding unstressed syllables only seldom involve a rising rhythm, but are treated rather as anacrusis (**Auftact**); accordingly we usually say: die | Kirche | würde vom | Blitze ge|tróffen
5 1 4 2 3
and not: die Kirch|e würd|e vom Blitz|e getróf|fen.
The stress-groups are graduated according to their force; the

Stress-groups
and sentence-
stress in gen-
eral.

added figures indicate the force of the sentence-stresses, 1 the strongest, 5 the weakest.

A stress-group is reckoned from one stressed syllable to the other; but the distribution of the stresses themselves in a sentence is determined by grammatical, logical (or psychological) and physiological factors; cf. §§ 85, 3. 86 and the different forms of stress-groups in *das ist ein Schloß* § 125.

It is not easy to indicate with absolute certainty in each case, to which of these three (or four) factors every sentence-stress is due, as they do not exclude each other, but rather cooperate. If we treat these three (or four) factors individually in the following paragraphs, we shall be paying attention for the time being to one only of the qualities of the sentence-stress and setting aside the two (or three) others.

122. In unemotional speech where no special circumstances are assumed, i. e. in sentences the accentuation of which is not influenced by special logical or psychological reasons, in general the following rules for the accentuation of the individual parts of speech can be given:

Grammatical
sentence-
stress; notional
and relational
words.

As in a single word, so also in a whole sentence, the material element is more important than the formal one, and therefore the former has a stronger stress than the latter. Accordingly the **notional words** (**Begriffswörter**), i. e. nouns, adjectives, verbs, and adjective-adverbs, have a stronger stress than the **relational words** (**Beziehungswörter**), i. e. auxiliary verbs, articles, pronouns, conjunctions, prepositions, and adverbial particles. As the notional words are more variable than the relational words, which are repeated far oftener than the former, the rule can also be expressed thus: a variable word has a stronger stress than a stable one. Accordingly: the auxiliary verb has a weaker stress than the verb (*ich wèrde lésen; ich hàbe gelésen*); the article is subordinated to the noun (*der Knábe*); the pronoun to the verb (*ich lése*). The preposition, standing before or after, has a weaker stress than the word governed by it (*mit Wáffen; die Nàcht dùrch; dùrch diesen*).

There are, however, two strange exceptions: 1) the preposition has the stronger stress, if it is followed by a personal pronoun (*mit ùns; vón ihm; óhne èuch; búi ihr*); 2) the

preposition (or rather adverbial particle) has the principal stress in a verbal juxtaposition and therefore also, if it is separated from the verb (mitbringen, ich bringe mit); cf. § 123, 3.

A relational word is very often stressless as enclitic or proclitic (kómmt sie *kʰó²m¹t̚s̚i¹*; sie kómmt *z̚i¹kʰó²m¹t̚*; schwárz oder wéisz *ʃb̚á²r̚t̚s̚ó¹d̚r̚|w̚é²ʒ̚s̚*; Häus und Hóf *h̚b̚²²̚s̚u²u̚t̚|h̚ó²f̚*).

123. The notional words show different degrees of sentence-stress amongst themselves; c. g.:

1) In general a noun has a stronger stress than an adjective, and an adjective a stronger one than an adverb: ein z̚i'emlich gr̚s̚z̚er M̚ánn; but very often this proportion is disturbed by the logical or psychological stress.

Gradation of the grammatical sentence-stress in notional words.

2) A verb has usually a weaker stress than its predicative nomen or its object; er m̚ácht ihn gesúnd; er m̚ácht eine T̚ár; sie w̚áhl̚ten den F̚úrsten zum K̚ó̚nig.

3) A verb has a weaker stress than the adverbial determinatives of place, time, and manner: er l̚ébt éins̚ám; er f̚á̚hrt in die St̚ádt; er k̚ó̚mmt h̚éute; er r̚éitet geschwind.

124. Two notional words (chiefly nouns) so closely connected with each other that they denote only one idea have stresses of different strength, and mostly the stronger one is on the second word. The same tendency to increase the force of the stress at the end showed itself in the juxtapositions; cf. §§ 111. 116.

Grammatical sentence-stress in notional words closely connected with each other.

The following cases may be especially mentioned:

1) Parallel expressions connected by a relational word: T̚òd und T̚éufel, H̚áus und H̚óf, Schrit̚t vor Schrit̚t, j̚úng und ált, etc.

2) Appositions, titles, surnames: M̚útt̚er 'Erde, V̚áter Rh̚éin, ein Gl̚ás W̚áss̚er, ein Pf̚únd T̚ábak, K̚áiser Fried̚rich, H̚èrr D̚óct̚òr, D̚óct̚òr M̚úll̚er, J̚ácob Gr̚ímm, etc.

3) Nouns and pronouns with a prepositional attribute: der Kn̚ábe mit dem H̚únde, der R̚itter mit dem L̚ó̚wen, d̚èr auf dem D̚áche, die am F̚énster, etc. Especially so

the attributive expressions of place: die Schlächter bei Lützen, der König von Schweden.

4) If a word is combined with a partitive or possessive genitive, the second element has the stronger stress; e. g. ich habe das Buch des Lehrers or des Lehrers Buch gelesen. But an explanatory genitive, as it denotes the real idea, attracts the stronger stress in either case, e. g. das Laster des Trunkes or des Trunkes Laster (= der Trunk) ist verächtlich.

125. The logical and psychological sentence-stresses are of a rhetorical character and are not attached to a certain part of speech. In the sentence das ist ein Schloß each of the four words can have the principal stress: *dás ist ein | Schlósz, das íst | ein Schlósz, das | ist ein | Schlósz, dàs ist ein | Schlósz*, according to the individual idea to be expressed by the sentence; for, by a stronger stress is distinguished anything that in view of the thought (logically) or in view of the feeling (psychologically) appears to be important to the speaker (subjectively), or is intended to appear important to the addressed person (objectively). Or, in other words, we can say that those words have weaker or no stress which could easily be supplied, if they were suppressed, as often happens in a telegram; e. g. (der) Váter (ist) gèstern gestórben, übermorgen (findet die) Beérdigung (stätt).

As in a single word the natural accentuation can be deranged by the logical or psychological accent (cf. § 86), so in a sentence too; e. g. we say Jácob Grímm instead of Jácob Grímm (cf. § 124, 2), if he is to be contrasted with Wílhélm Grímm.

There are a few words which are especially prone to attract the principal sentence-stress: gewisz, sicher, jedenfalls, vielleicht, schwerlich, kaum, allein, ausschliesslich, besonders, vor allem, am meisten, vorzüglich and similar expressions; the adverbs ending in -weise (glücklicherweise, vorzugsweise etc.); demonstrative and interrogative pronouns (wér hat es getàn?, díeser hat es gesàgt); and all the negatives.

126. With regard to the physiological word-stress reference has frequently been made to the tendency to alternate

between a stronger and weaker stress within a word (cf. §§ 86. 93. 95. 100, 3, 4, 7). The same trend is to be found within a sentence. So e. g. an enclitic or proclitic (cf. § 122) can receive a secondary stress, if a stressless syllable immediately precedes or follows; e. g. sie kómmt, but sie bekómmt; ságst du, but ságstest dù; schwárz oder wéisz, but schwárze óder wéisze; Hàus und Hóf, but erwèrben ünd besitzen.

Physiological
sentence-
stress.

On the other hand, the principal stress can be reduced to a secondary one, also for physiological reasons; for a succession of equally strong stresses would require several strong impulses of expiration, which would follow immediately upon each other, without the air of the preceding ones being quite consumed; so the gymnasts' device frísch, fréi, fróh, frómm becomes frisch, frei, rõh, rõmm; kéin Ménsch war gekómmen is often pronounced kèin Ménsch war gekòmmen, although a strong logical emphasis lies upon kein.

Appendix.

Materials for practical exercises.

I. Consonantism.

Dampf, sanft; Portion, Actie, Aristokratie; Barbier, Bankier, Spanier; zwar, wahr, Welle, Schwelle, Quelle, Kelle; Scene, Skizze; Schach, Schah, chemisch, hämisch; können, gönnen; Volke, folge; Clique, Biskuit, Guirlande; Chirurgie,
 5 Chirurg; Auge, Aug', Augsburg, Flagge, flaggst, lagst; Genie, Genius, genial, Ingenieur; Katalog(e), Logik, Philologie; tragend, Agent; sauge, säuge, Lage, Loge, Lüge; regieren, Regie, Regent, aufregend; Colleg, College; Doge, Dogge; wachen, wagen, wacht, wagt, Wagner; liegen, liegt, lagen, lag; Mon-
 10 arch, barg, Echo, Egoismus; Dachs, wachst; wächst, nächst, sächsisch; Frauchen, rauchen, Chemnitz, Charfreitag, Check, Chef; Czar, Czeche; Bronze, Gaze, Grazie, Zeus; Station, Hospital, Spital; Asse, Ase, Asche, Courage; Service, Sergeant; Ignorant, Ungarn, Finger, Fink, fing; Lützow, Charkow;
 15 brav(e), Nerve, nervös, Pulver, Sklave, Wilhelmshaven, Frevel, Vers, Verdict; Bund, bunt; Kalb, Kälber; Knäbchen, Knäblein; Magd, Mägede, Mädchen; schallen, schallt, schalt, bald; heilsam, seltsam; lang, Klänge; März, Schmerz, mehr; drüben, trüben; Diener, Diner, Dessert, Corps; Mexico, exakt, Xerxes; Cham-
 20 pagner, Compagnie, Compagnon; Detail, Bataille; Thron, Tapferkeit, Rauheit, Papier, Local, Tier, Stier, Zier, Ahorn; unachtsam, beobachten; säen, sähen; beenden, vollenden, Ocean; wate, Watte, Wade, Kladde; Bahnkasse, Bankkasse; Selbstsucht, Selbstzucht; fort, Fort; Ganges.

II. Vocalism.

Elendsten; Elemente; lebender, lebendiger, Indier; entgegenrennen; Patient, redend; Ferse, Färse, wehren, wahren; sehen, Seeen, sähen, Schären, scheren; Alliance, Bronze, Athene;

gebet, Gebet, gäbet; Charakter, Charaktere, charakteristisch; Kaffee, Café; beredt; Idee, ideell; fehle, Fälle, fühle, Fülle; 5 heute, Häute; Bayer, Affaire; Refrain, Waise, Weise; Pension, Pensum; Metrum, Parfum; Finanz, Chance; Bastion, Balcon; pfui, Zuidersee, Duisburg; Voigtland, Loisach; Yssel, Radetzky, Schwyz, psychisch; Maestricht, Athenaeum; Revue, Kotzebue; Boeotien, Soest, Boer; Curator, Curatoren; musz, Musze; 10 kriegte; vierhundertvierzehn; vielleicht; Jena, jene, jenseits; Urteil, Ursache; Stadt, Städte; Profit, Deficit; Wüste, wüszte; Bruch; waschen, wusch; Mond; nächste; vorbei; Hochzeit, Hochsommer; Studium, Student; Drama, dramatisch; Osten, Ostern, Östreich; messen, Masz; schosz, Schosz; harsch, Barseh; 15 irdisch, Erde.

III. Accentuation.

Tadelte, tadle; Hoheit, Ameise; Otto; Erzgauner, Erzherzog; ungeheuer, Ungeheuer; unzählig, unhöflich, undentlich, undentbar, unbeschadet, ungehalten; schwarzrotgold, blaugrau, hellgrau; uralt(e), urplötzlich, urbar; stocksteif(e), steinreich(e); altenglisch; allmächtig, allseitig; Orlamünde; Bornholm; Süd- 5 deutschland, Südengland; Karfreitag, Karwoche; Oberstleutnant, Oberleutnant; Walküre; auszerordentlich; wahrhaftig, wahrhaft; unterrichten, unterscheiden; frohlocken, willfahren, ratschlagen; Miszgunst, miszgönnen, Miszhandlung, miszverstehn; Satan, Organ, Grobian; Glasur, Purpur; Hornist, Hornisse; Subjekt; August; Moral, Metall, Marschall, fatal; Husar, Altar; Artikel, Flanell, parallel; Accent, Continent, Student; Studie, Genie, Partie, Copie, Grazie; Paris, Türkis, gratis; Motiv, activ, naiv; Spion, Dämon, Kolou, Salon; Renntier, Rentier; Prinzesz; Musik, Logik, Technik, Kritik, Metrik, Musiker; Tenor, 15 Pastor, Major; elegant, Consonant(en); Arabien, Araber, arabisch; Katholik, katholisch; Abscheu, abscheulich; lutherisch; lebendige; Urteil, Vorurteil; damit, fürlich, fürbasz; Halbjahr, Jahrzehnt; beispielsweise, glücklicherweise; Elsass-Lothringen; Hansnarr, Herrgott; einerlei; Gottseibeius, Springinsfeld, Stelldichein; modern; Legende; Ostelbier; Vorderhand, vorderhand. 20

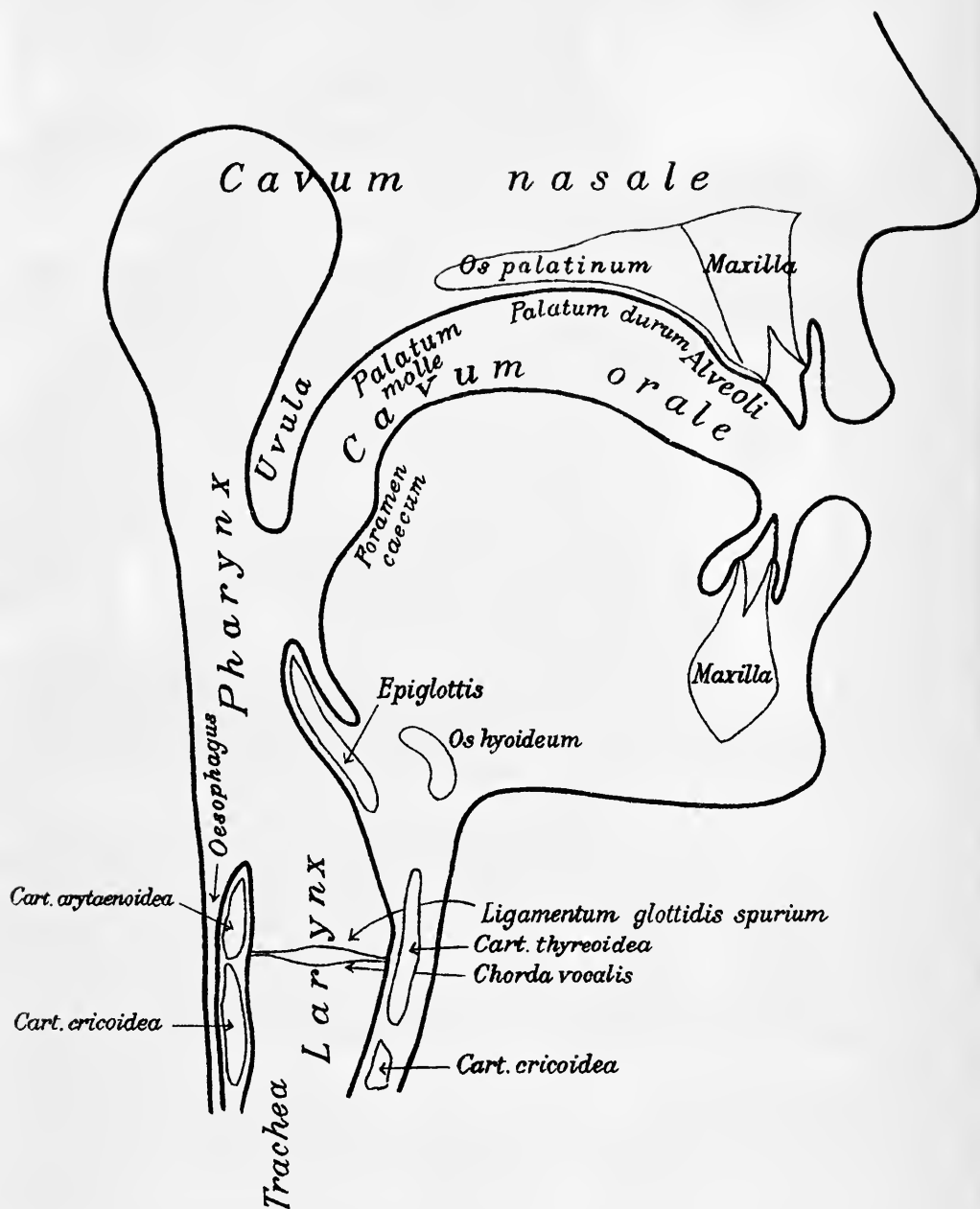


Fig. I.

The organs of speech (about natural size).

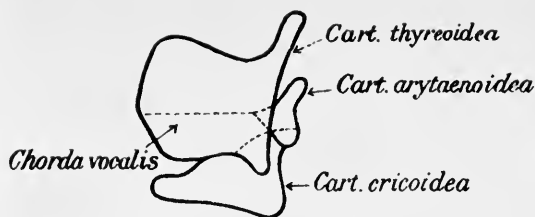


Fig. II.

The cartilages of the larynx, seen from the left side.

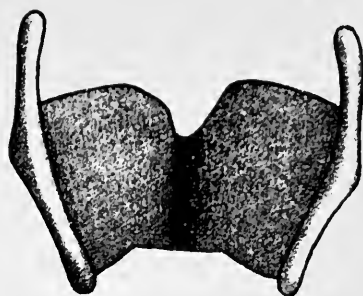


Fig. III.

The cartilago thyroidea from the back.

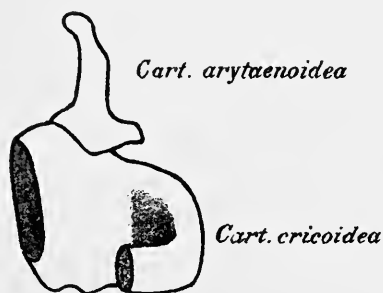


Fig. IV.

The left half of the cartilago cricoidea with the left cartilago arytaenoidea, seen from the front.

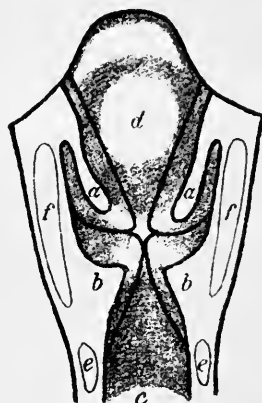


Fig. V.

Section showing the front half of the larynx, seen from the back; a, a) ventricular bands; b, b) vocal chords, between these two pairs are the laryngeal ventricles, between b and b is the glottis vera; c) trachea; d) epiglottis; e, e) cart. cricoidea; f, f) cart. thyroidea.

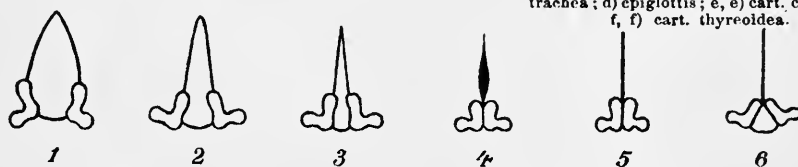


Fig. VI.

The forms of the glottis and the different positions of the cartilagine arytaenoideae: 1) breathing; 2) voiceless sound; 3) *h*; 4) voiced sound; 5) glottal stop; 6) whispering.



Fig. VII.

The positions of the lips.



Fig. VIII.
The uvular trill *r*.



Fig. IX.
The mediopalatal occlusive sounds *g*, *h*; the dotted line at the top of the tongue indicates the articulation of the mediopalatal fricatives *g* and *h*.

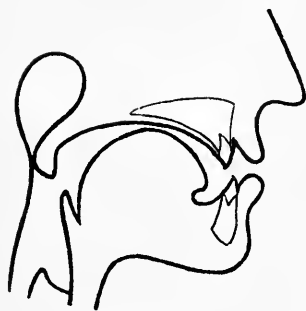


Fig. X.
The prepalatal fricatives *j* and *ɲ*.



Fig. XI.
The alveolar *d*, *t*, and *l*; the dotted lines indicate the articulation of the alveolar nasal *n*.

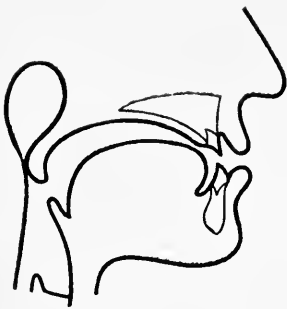


Fig. XII.
The alveolar *z* and *s*.



Fig. XIII.
The alveolar *ž* and *š*.

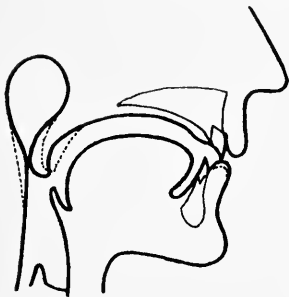


Fig. XIV.
The labiodental *pʷ*; the dotted line at the lower lip indicates the articulation of *w* and *f*; the dotted lines at the uvula indicate the articulation of *ŋ*.

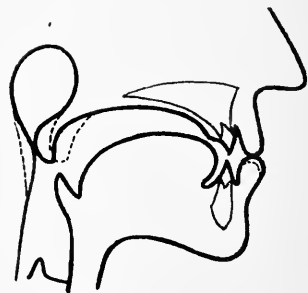


Fig. XV.
The bilabial *b* and *p'*; the dotted line at the lower lip indicates the articulation of *b*; the dotted lines at the uvula indicate the articulation of the bilabial *m* and *ɱ*.



Fig. XVI. \bar{u}^1 .

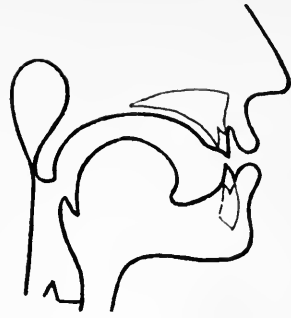


Fig. XVII. \bar{o}^1 .

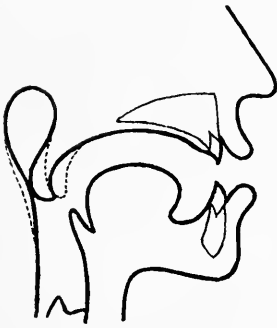


Fig. XVIII. a^2 .

The dotted lines indicate the articulation of the nasalized \bar{a}^2 .

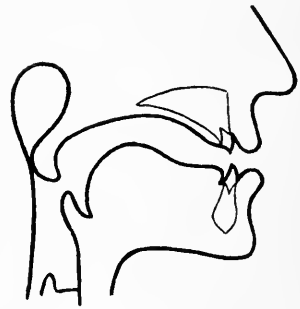
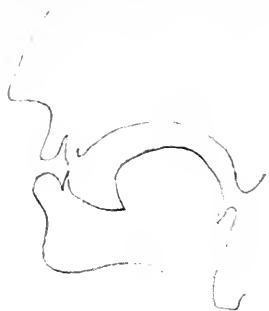


Fig. XIX. \bar{a}^1 .



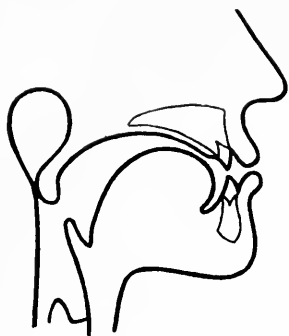


Fig. XX. i' .



Fig. XXI. \bar{e}' .

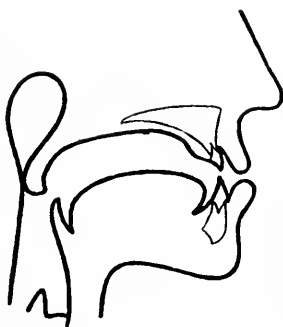


Fig. XXII. \bar{o}' .



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